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CRPL-F 162 PART A

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PART A
IONOSPHERIC DATA

ISSUED
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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

IONOSPHERIC DATA

CONTENTS

	<u>Page</u>
Symbols, Terminology, Conventions	2
Predicted and Observed Sunspot Numbers.	5
World-Wide Sources of Ionospheric Data.	6
Erratum	8
Examples of Ionospheric Vertical Soundings Maui, Hawaii; October 16, 1957.	9
Tables of Ionospheric Data.	11
Graphs of Ionospheric Data.	23
Index of Tables and Graphs of Ionospheric Data in CRPL-F162 (Part A).	59

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

- M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

- Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

- a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer critical frequency; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer, $h'F$ or $foEs$, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an $h'Es$ median.

3. For all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Ordinarily, a blank space in the fEs or $foEs$ column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE . Blank spaces at the beginning and end of columns of $h'F2$ or $h'F1$, $foF1$, $h'E$, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of $h'F1$ and $foF1$ is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.
- d. The tables may contain median values of either $foEs$ or fEs . The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of $foEs$ when necessary.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number									
	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949 1948
December		150*	150	42	11	15	33	53	86	108 114
November		150*	147	35	10	16	38	52	87	112 115
October		150*	135	31	10	17	43	52	90	114 116
September		150*	119	30	8	18	46	54	91	115 117
August		150*	105	27	8	18	49	57	96	111 123
July	150*	150*	95	22	8	20	51	60	101	108 125
June	150*	150*	89	18	9	21	52	63	103	108 129
May	150*	150*	77	16	10	22	52	68	102	108 130
April	150*	150*	68	13	10	24	52	74	101	109 133
March	150*	150*	60	14	11	27	52	78	103	111 133
February	150*	150*	53	14	12	29	51	82	103	113 133
January	150*	150*	48	12	14	30	53	85	105	112 130

*This number is believed representative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1956.

Observed Sunspot Number											
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Dec.
1954				3	4	4	5	7	8	8	9 12
1955	14	16	19	23	29	35	40	46	55	64	73 81
1956	89	98	109	119	127	137	145	148	149	154	157 162
1957	169	171	174	181	186	188	192				

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the
Commonwealth Observatory:

Brisbane, Australia
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

Meteorological Service of the Belgian Congo and Ruanda-Urundi:

Bunia, Belgian Congo
Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

Belgian Royal Meteorological Institute:

Dourbes, Belgium

Escola Politecnica, University of Sao Paulo:

Sao Paulo, Brazil

British Department of Scientific and Industrial Research, Radio
Research Board:

Slough, England

Defence Research Board, Canada:

Baker Lake, Canada
Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University,
Taipeh, Formosa, China:

Formosa, China

Danish National Committee of URSI:

Godhavn, Greenland

The Finnish Academy of Sciences and Letters:

Sodankyla, Finland

National Laboratory of Radio-Electricity (French Ionospheric
Bureau):

Casablanca, Morocco
Poitiers, France

The Royal Netherlands Meteorological Institute:

Paramaribo, Surinam

Central Institute of Meteorology, Budapest, Hungary:
Budapest, Hungary

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

Ministry of Postal Services, Radio Research Laboratories, Tokyo,
Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of
Scientific and Industrial Research:
Campbell I.
Cape Hallett (Adare)
Christchurch, New Zealand
Rarotonga, Cook Is.
Scott Base

Manila Observatory:
Baguio, P.I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Propa-
gation, Moscow, U.S.S.R.:
Irkutsk
Leningrad

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:
Lycksele, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm,
Sweden:
Lulea, Sweden

United States Army Signal Corps:
Adak, Alaska
Fletchers Ice I.
Ft. Monmouth, New Jersey
Grand Bahama I.
Okinawa I.
St. John's, Newfoundland
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):

Anchorage, Alaska

Fairbanks, Alaska (Geophysical Institute of the University of Alaska)

Maui, Hawaii

Panama Canal Zone

Point Barrow, Alaska

Puerto Rico, W.I.

Washington, D.C.

ERRATUM

Rarotonga data for May 1957 and April 1957 were taken on 157.5°W time, and for July 1957 and June 1957 on 150°W time. Please make appropriate corrections to tables and graphs in CRPL-F158, -F160, and -F161.

EXAMPLES OF IONOSPHERIC VERTICAL SOUNDINGS
 MAUI, HAWAII, OCT. 16, 1957
 (Geomagnetic Latitude 21°N)

The following ionograms were obtained at the NBS Maui, T.H., vertical sounding station. They are typical of day and night conditions for October at this geomagnetic latitude. Ionospheric data are scaled directly from these records onto the daily f-plot, a graph of frequency characteristics v. time. The f-plot or the data represented by these soundings is found on the following page. Medians as found in the Tables of Ionospheric Data are calculated using hourly values taken from the f-plot or directly from the ionogram.

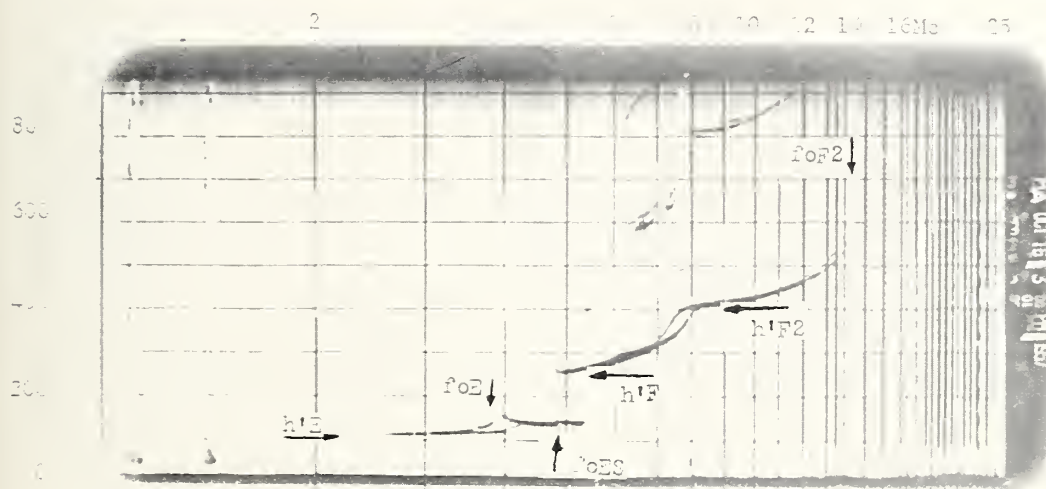


Fig. A. Maui, T.H., Oct. 16, 1957, 1500 hours, 150°W time.

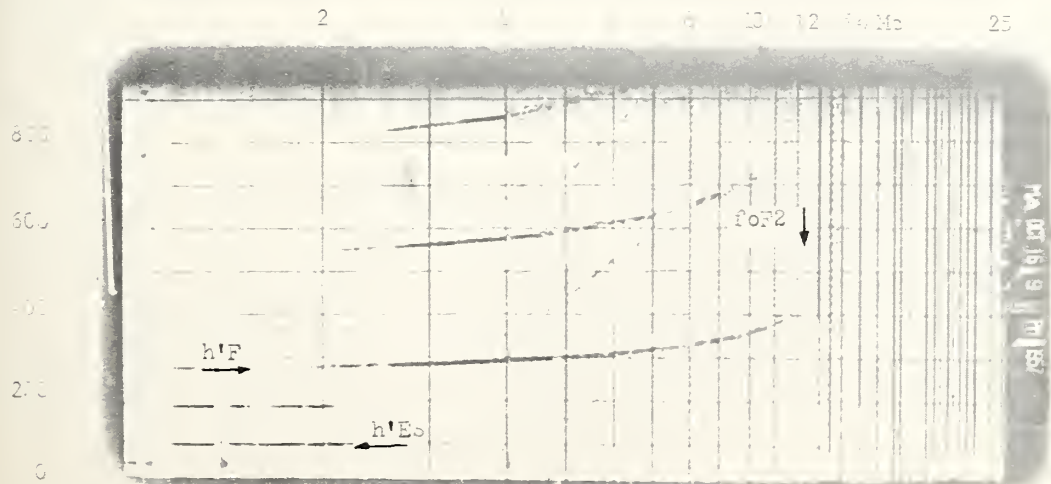
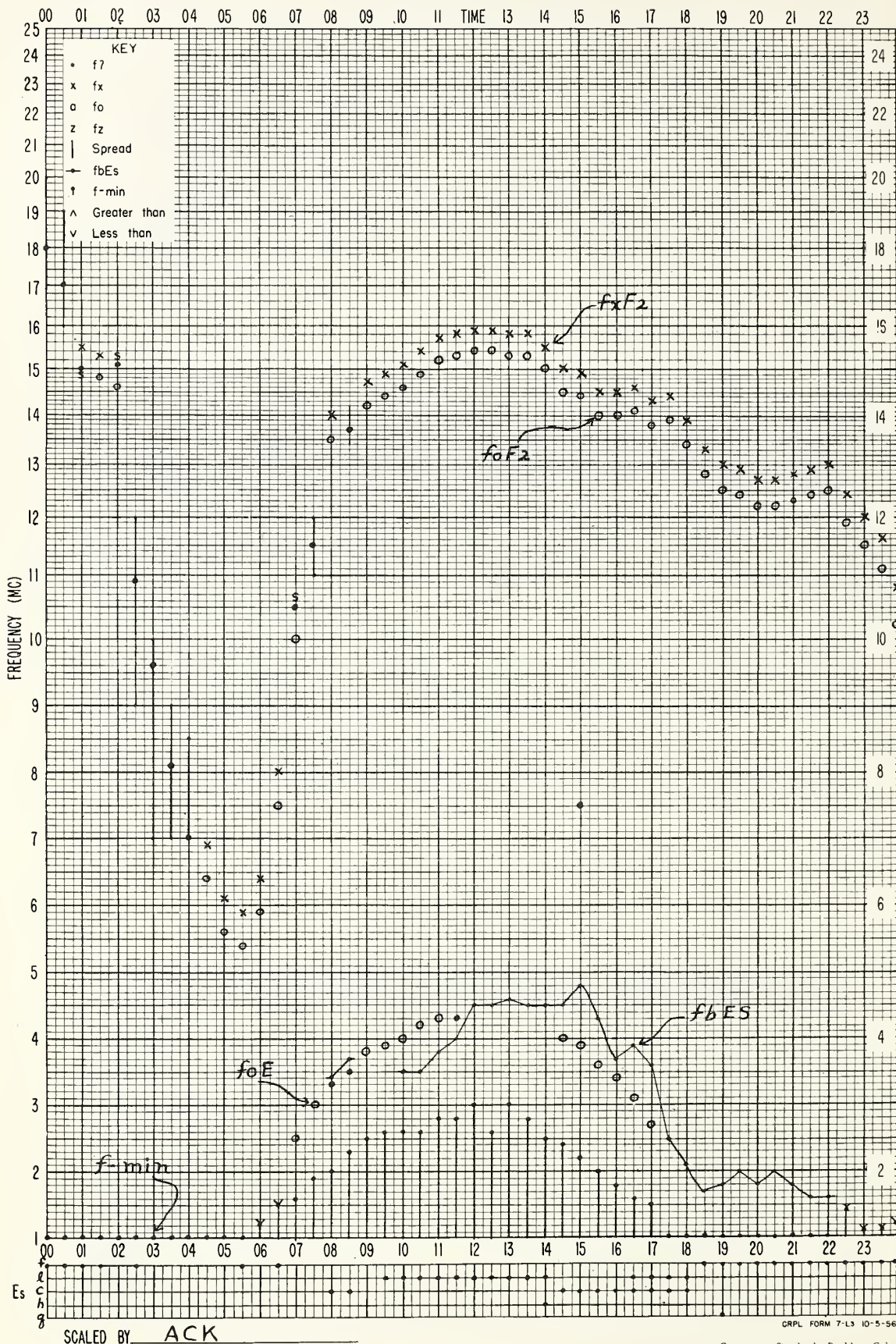


Fig. B. Maui, T.H., Oct. 16, 1957, 2100 hours, 150°W time.

Maui, Hawaii
STATION ION MA

f- PLOT OF IONOSPHERIC DATA

DATE OCT. 16, 1957

TABLES OF IONOSPHERIC DATA

11

Table 1

Lycksele, Sweden (64.6°N, 18.8°E)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	340				2.7	2.4
01		5.8	335				2.3	2.4
02		5.7	325				2.0	2.4
03		6.0	315				2.2	2.4
04		5.8	295				1.6	2.4
05		5.8	270					2.6
06		5.4	260					2.5
07		5.6	270			E		2.8
08		7.6	255			E		2.9
09		10.2	245		110	1.95		3.0
10		12.0	235		105	2.25		3.0
11		14.0	230		105	2.20		3.0
12		14.2	230		105	---		3.0
13		14.3	230		105	2.10		3.0
14		13.7	230		105	1.95		3.0
15		13.2	225		---	E		3.0
16		11.6	230		---	E		3.0
17		9.4	230		---	---		2.9
18		6.7	245					2.75
19		5.5	290					2.5
20		5.6	340				2.2	2.3
21		5.6	335				2.2	2.4
22		5.8	350				2.4	2.4
23		5.8	360				2.6	2.4

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 2

Formosa, China (25.0°N, 121.5°E)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		14.0	240					2.80
01		13.0	240					2.80
02		11.2	230					2.80
03		8.6	230					2.85
04		7.0	<240					2.65
05		6.3	260					2.60
06		8.6	280					2.75
07		12.8	250			(2.5)		3.00
08		14.5	240			(3.3)	3.5	2.90
09		15.3	240				3.8	2.80
10		15.6	240			(4.0)	4.1	2.65
11		15.9	230			(4.2)	4.4	2.55
12		16.3	230			(4.2)	4.2	2.45
13	(420)	16.8	230		(7.4)	4.2	4.4	2.40
14	410	16.8	240		(7.3)	(4.0)	4.2	2.45
15	---	16.6	240			3.6	4.0	2.45
16	---	16.6	250			3.0	3.5	2.45
17	---	16.4	270			(2.2)	2.2	2.50
18		>17.0	280				2.6	2.55
19		18.4	300				2.4	2.50
20		>19.0	280					2.65
21		>18.5	240					2.75
22		(16.9)	230					(2.70)
23		15.0	240					2.75

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 3

Fletchers Ice I, (82.0°N, 104.4°W)

October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.2	280					2.65
01		7.8	265					2.55
02		6.8	275		---	---		2.60
03		7.0	265		---	---		2.65
04		6.2	260		---	---		2.60
05		(7.6)	260		---	---		(2.70)
06		7.2	255		---	---		2.65
07		6.8	250		---	---		2.70
08		6.2	260		---	---		2.75
09		7.2	255		---	---		2.70
10		8.0	260		131	---		2.75
11		7.6	255		122	1.65		2.80
12		8.4	265		117	1.95		2.75
13		7.7	260		121	(1.90)		2.75
14		8.4	255		126	1.95		2.70
15		8.3	250		122	(1.95)		2.80
16		7.2	270		121	(1.70)		2.70
17		7.8	270		147	(1.80)		2.70
18		7.2	270		125	(1.55)		2.70
19		7.6	260		---	---		2.80
20		6.8	265		---	---		2.70
21		7.8	265		---	---		2.70
22		6.2	265		---	---		2.65
23		6.2	270		---	---		2.60

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Thule, Greenland (76.6°N, 68.7°W)

October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.4	280					2.50
01		(6.5)	270					(2.60)
02		(6.0)	280					(2.50)
03		(4.8)	280					(2.60)
04		---	270					---
05		(6.0)	270					(2.60)
06		5.6	270					2.70
07		6.2	265			138	---	2.75
08		6.4	270			139	---	2.80
09		8.1	270			122	(2.10)	2.80
10	---	8.0	270			120	(2.25)	2.70
11	---	8.2	270			127	(2.35)	2.65
12	---	7.2	265			119	(2.40)	2.65
13	---	8.0	270			119	(2.30)	2.70
14	---	8.2	270			125	(2.20)	2.60
15		7.4	275			131	---	2.70
16		8.1	265			---	---	2.55
17		(7.4)	280					(2.50)
18		8.6	270					2.60
19		(6.9)	275					(2.60)
20		(5.8)	270					(2.45)
21		6.6	270					2.40
22		(6.9)	275					(2.55)
23		(5.5)	280					(2.50)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

St. John's, Newfoundland (47.6°N, 52.7°W)

October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.2)	300					(2.60)
01		(6.0)	300					(2.50)
02		(5.2)	290					(2.55)
03		(5.0)	290					(2.50)
04		(5.2)	290					(2.50)
05		(5.0)	270					(2.60)
06		7.1	260		145	---		2.90
07		10.2	240		119	2.60		3.05
08		12.1	230		115	3.00		3.00
09		12.6	225		111	3.40		2.90
10		12.6	220		109	3.50		2.80
11		13.0	220		111	3.70		2.75
12		13.0	225		111	3.70		2.70
13		12.9	230		115	3.60		2.60
14		12.9	235		119	3.35		2.65
15		12.8	240		119	3.00		2.70
16		12.4	240		125	2.50		2.70
17		11.6	250		---	---		2.75
18		10.0	250					2.70
19		8.9	250					2.60
20		7.7	270					2.60
21		7.5	280				1.9	2.60
22		6.8	295					2.55
23		(6.6)	300					2.55

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Ft. Monmouth, New Jersey (40.3°N, 74.1°W)

October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.6	<270				(2.6)	2.65
01		7.2	<270				3.7	2.60
02		6.8	265				(2.5)	2.60
03		6.4	265				(2.5)	2.55
04		6.2	265				(3.5)	2.50
05		5.9	250					2.60
06		6.8	260			---	---	2.80
07		10.0	235			111	2.50	3.00
08		12.5	230			109	3.10	3.00
09		13.4	225			107	3.50	2.90
10		13.7	220			107	3.70	2.80
11		13.8	220			107	3.85	2.70
12		13.5	225			107	3.90	2.65
13		13.3	230			107	3.90	2.60
14		13.0	235			109	3.65	2.55
15		12.8	235			111	3.35	2.60
16		12.5	240			113	2.75	2.65
17		12.0	250			<124	2.10	2.70
18		11.2	245				(2.0)	2.70
19		10.0	250				(2.3)	2.65
20		9.2	250					2.65
21		8.5	260					2.70
22		8.0	265				(2.2)	2.60
23		7.8	270				(1.8)	2.60

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 7

Washington, D.C. (38.7°N, 77.1°W) October 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.4	275				2.4	2.65
01		7.2	275					2.65
02		6.9	270				(2.4)	2.60
03		6.5	270				(1.8)	2.60
04		6.3	270					2.65
05		6.0	265				(2.5)	2.60
06		6.5	270					2.75
07		9.6	240		117	2.45		3.00
08		12.2	230		109	3.00		2.95
09	---	13.5	230		109	3.40		2.85
10	---	13.6	230		109	(3.70)		2.75
11	---	13.7	220		109	3.90		2.65
12	---	13.6	230		109	3.95		2.60
13	---	13.3	230		109	3.95		2.55
14		13.2	235		109	3.75		2.55
15		13.0	240		110	3.40		2.55
16		12.6	240		111	3.00		2.55
17		12.0	250		119	2.25		2.65
18		11.3	250					2.65
19		10.1	240				2.9	2.65
20		9.3	250				3.6	2.65
21		8.6	260				(2.7)	2.65
22		8.0	270				(1.6)	2.60
23		7.7	270					2.60

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Maui, Hawaii (20.8°N, 156.5°W) October 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.4	235					2.90
01		11.2	230					2.90
02		9.3	230					2.85
03		7.2	230					2.80
04		6.2	270					2.60
05		5.6	290					2.60
06		6.2	305				1.7	2.60
07		10.0	260		121	2.50		3.00
08		12.8	240		114	3.30	3.4	2.90
09		14.2	235		111	3.80	3.9	2.80
10		14.7	230		111	4.10	4.2	2.65
11	(405)	15.3	225	---	111	4.30	4.3	2.55
12	420	15.4	230	8.0	111	4.40		2.50
13	420	15.9	235	7.6	111	4.30		2.45
14	420	16.0	240	7.6	111	4.20	4.3	2.45
15	410	15.6	240	7.2	111	3.90	4.5	2.40
16	(395)	15.0	245	---	111	3.40	4.0	2.45
17	(280)	14.4	255		115	2.75	4.5	2.55
18		14.1	275		---	---	4.9	2.60
19		14.2	270				4.4	2.65
20		15.5	280				4.4	2.65
21		16.5	275				4.0	2.70
22		16.5	250				2.9	2.80
23		(14.8)	235				2.2	(2.85)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

Puerto Rico, W.I. (18.5°N, 67.2°W) October 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.0	260					2.75
01		8.4	250					2.90
02		7.4	240					2.95
03		6.3	240					2.80
04		5.7	250					2.50
05		5.4	290					2.55
06		6.2	270				2.6	2.70
07		9.6	240		122	2.50		3.05
08		12.1	235		109	3.20		3.00
09		13.4	235		109	3.70		2.85
10		13.6	230		109	4.00		2.80
11	---	13.5	225		109	(4.20)		2.65
12	---	13.2	225	---	109	(4.20)	4.5	2.55
13	400	13.0	230	(7.4)	111	(4.20)	4.5	2.50
14	(420)	13.0	230	(7.1)	111	(4.00)	4.4	2.45
15	---	12.6	235	---	113	(3.85)	4.3	2.45
16		12.2	240		113	3.50	4.0	2.45
17		11.8	250		117	(2.90)	3.4	2.50
18		11.6	265				2.5	2.55
19		10.7	270				2.6	2.60
20		10.3	270					2.60
21		9.8	270					2.65
22		9.9	275					2.70
23		9.4	265					2.75

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Panama Canal Zone (9.4°N, 79.9°W) October 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.4	235					2.90
01		8.8	225					2.95
02		6.8	220					2.85
03		5.6	235					2.70
04		5.5	245				1.8	2.65
05		4.8	260				2.2	2.60
06		6.4	300				2.0	2.65
07		10.9	250		117	2.75		2.95
08		13.0	240		111	3.50		2.90
09	---	14.0	230		109	4.00		2.80
10	---	14.0	225		109	4.20		2.70
11	(395)	14.0	225		109	4.40		2.55
12	435	13.9	220		107	4.40		2.50
13	450	14.0	220	7.6	108	4.40	4.5	2.45
14	450	14.0	230	6.9	107	(4.20)	4.5	2.40
15	440	13.5	240	---	107	(3.95)	4.7	2.40
16	420	13.3	245		109	(3.50)	4.7	2.45
17		13.0	260		111	(2.80)	4.4	2.50
18		13.0	280				4.3	2.60
19		13.0	280				4.2	2.65
20		(13.0)	275				(3.5)	(2.65)
21		(12.8)	245				(3.1)	(2.70)
22		(12.6)	250				(3.1)	(2.75)
23		11.7	240				(3.5)	2.85

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Bunia, Belgian Congo (1.5°N, 30.2°E) October 1957								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	12.0					1.6	2.52
01	250	11.7						2.54
02	230	11.0					1.6	2.74
03	220	9.4					1.6	2.86
04	250	9.1			130	---	3.0	2.76
05	250	11.0	245	---	115	3.1	4.0	2.70
06	---	12.0	240	---	110	3.7	4.2	2.42
07	---	13.0	230	---	110	4.0		2.18
08	---	13.9	230	---	110	4.1		2.11
09	(510)	14.1	230	---	110	---		2.01
10	545	14.5	230	---	110	---		1.94
11	(550)	14.5	240	---	110	---		1.89
12	550	14.2	225	---	110	---		1.88
13	580	14.0	240	---	110	3.9		1.86
14	(570)	14.0	250	---	110	3.5		1.86
15	---	14.0	270	---	120	2.8	2.8	1.87
16	(330)	13.6	305	---	---	---		1.83
17	410	>13.0						1.76
18	350	---						---
19	300	---					1.4	---
20	250	---					2.0	---
21	230	---						---
22	240	(11.5)						2.32
23	265	11.7						2.39

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 12

Leopoldville, Belgian Congo (4.4°S, 15.2°E) October 1957								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	13.3						2.41
01	255	11.4						2.52
02	240	10.6						2.62
03	230	8.8						2.62
04	215	6.9					1.7	2.71
05	250	8.4	250	---	125	2.2	3.0	2.64
06	260	10.6	240	---	115	3.1	3.8	2.60
07	280	11.6	235	---	110	3.8	4.4	2.34
08	380	12.6	230	---	110	4.0	4.4	2.17
09	415	13.2	235	---	110	4.2		2.10
10	480	13.7	230	---	110	4.2		2.00
11	495	14.0	240	---	110	---		1.99
12	500	14.9	240	---	110	4.2		1.93
13	495	15.0	240	---	110	4.1		1.97
14	490	15.0	245	---	110	3.9		1.96
15	485	15.0	250	---	110	3.4	4.0	1.97
16	445	>15.0	270	---	115	2.7	3.1	1.99
17	400	15.0	330	---			3.0	1.99
18	390	15.0						1.98
19	315	(16.5)						(2.27)
20	250	16.4						2.42
21	240	16.5						2.46
22	230	14.9						2.45
23	240	14.1						2.41

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 13

Elisabethville, Belgian Congo (11.6°S, 27.5°E)									October 1957
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	280	9.0						2.38	
01	270	8.4						2.47	
02	255	7.3						2.49	
03	255	6.3					1.6	2.43	
04	255	8.4			145	2.0	2.5	2.59	
05	240	10.6	240	---	110	3.0		2.62	
06	255	11.6	235	---	105	3.6	3.9	2.48	
07	(305)	12.1	235	---	110	3.9		2.30	
08	400	12.7	235	---	110	4.0		2.19	
09	430	12.8	240	---	105	4.1		2.12	
10	450	13.0	245	6.8	105	4.2		2.07	
11	455	13.1	240	6.6	110	4.1		2.07	
12	450	13.3	245	6.5	110	4.0		2.06	
13	450	13.3	250	6.2	110	3.9	4.4	2.07	
14	430	13.0	250	---	115	3.6	4.3	2.07	
15	385	13.0	270	---	120	3.0	4.0	2.10	
16	320	13.3	300	---			3.3	2.16	
17	315	13.6					2.9	2.28	
18	290	14.0					2.8	2.34	
19	255	14.2						2.40	
20	240	13.2						2.40	
21	240	12.4						2.37	
22	250	10.6						2.40	
23	265	9.8						2.32	

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 15

Point Barrow, Alaska (71.3°N, 156.8°W)									September 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		5.4	280					2.6	(2.65)
01		(4.8)	290					2.2	(2.70)
02		4.5	300						2.60
03		(4.7)	295					4.0	(2.85)
04		(4.6)	290						(2.70)
05		(5.6)	(300)						(2.65)
06	---	(5.4)	(315)	---	---	---			(2.75)
07	---	(5.2)	(275)	---	---	---			(2.70)
08	(480)	(5.4)	(275)	4.2	111	2.90			(2.65)
09	---	6.2	(260)	---	109	2.90			2.80
10	---	6.8	(255)	---	101	3.25			2.80
11	(405)	6.5	245	---	105	(3.05)			2.80
12	---	6.7	240	---	---	---			2.80
13	---	6.8	240	---	109	(3.00)			2.80
14	(395)	7.0	240	4.5	109	2.95			2.80
15	---	7.1	240	---	109	2.90			2.85
16	---	7.2	250	---	112	2.70			2.80
17	---	6.6	250	---	112	2.45			2.90
18	---	6.4	260	---	---	---			2.80
19	---	5.2	255	---	---	---			2.90
20	---	5.2	270	---	---	---			2.90
21	---	4.4	300	---	---	---	3.0	(2.80)	
22	---	4.8	300	---	---	---	2.8	2.85	
23	---	4.4	290	---	---	---	2.4	(3.00)	

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Fairbanks, Alaska (64.9°N, 147.8°W)									September 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		(4.9)						3.7	(2.75)
01		(4.3)						4.0	(2.70)
02		(4.6)						4.4	(2.70)
03		(4.7)						3.8	(2.65)
04		(4.6)						4.5	(2.70)
05		(4.4)						3.5	(2.80)
06		(5.4)							(2.90)
07		5.9		---	121	---			2.80
08		6.2		(4.0)	104	2.95			2.80
09		6.3		(4.5)	105	3.20			2.70
10		7.0		(4.6)	107	3.30			2.80
11		6.5		(4.8)	109	3.40			2.70
12		6.7		4.8	108	3.40			2.60
13		7.0		(4.9)	108	3.35			2.70
14		7.0		(4.8)	110	3.25			2.75
15		7.2		---	110	3.00			2.80
16		7.1		---	109	2.70			2.80
17		6.8		---	111	2.45			2.90
18		7.4		---	127	(2.00)			2.95
19		(5.4)		---	---	---			(2.90)
20		(5.6)					2.8	(2.90)	
21		(5.7)					2.8	(2.90)	
22		(5.0)					3.1	(2.80)	
23		(4.8)					3.5	(2.80)	

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Thule, Greenland (76.6°N, 68.7°W)									September 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		(6.2)	265						(2.70)
01		5.8	270						2.70
02		(7.0)	270						(2.70)
03		(4.1)	275						(2.55)
04		(6.2)	270						(2.80)
05		6.4	270						2.75
06	---	6.8	270	---	<120	(2.40)			2.70
07	---	(7.0)	260	---	115	(2.50)			(2.80)
08	---	6.8	255	---	111	2.70			2.80
09	---	6.7	245	---	111	2.70			2.80
10	(555)	6.2	250	---	111	(2.90)			2.65
11	(680)	6.2	250	4.0	107	2.90			2.60
12	440	6.4	250	4.0	109	2.90			2.60
13	(540)	7.2	<250	4.1	107	2.90			2.60
14	(530)	6.6	255	3.9	115	2.80			2.60
15	(540)	7.0	260	3.9	<113	2.70			2.65
16	(540)	5.8	265	---	113	2.55			2.50
17	---	6.4	270	---	123	2.30			2.65
18	---	(7.8)	270	---	---	---			(2.65)
19	---	(6.9)	270	---	---	---			(2.65)
20	---	6.2	275	---	---	---			2.70
21		(6.0)	265						(2.70)
22		(6.0)	280						(2.60)
23		(5.8)	270						(2.60)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

Godhavn, Greenland (69.2°N, 53.5°W)									September 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		(5.4)							2.55
01		(4.8)							(2.50)
02		(4.9)							---
03		(3.8)							(2.35)
04		(4.1)							(2.50)
05		(4.2)							---
06		(5.0)							---
07		(5.6)		---	---	---			---
08		(6.2)		(3.8)	117	(2.55)			(2.45)
09		(6.9)		---	117	(2.90)			---
10		7.1		---	113	3.10			2.70
11		8.1		(4.6)	117	3.20			2.65
12		(7.2)		(4.5)	115	3.20			2.60
13		(7.2)		(4.2)	111	3.20			(2.40)
14		7.1		4.2	113	3.10			2.50
15		(6.8)		(4.2)	115	3.00			(2.55)
16		(7.0)		(4.2)	117	(2.90)			2.70
17		6.8		3.8	119	2.60			2.65
18		6.8		---	125	2.25			2.70
19		6.8		---	---	---	2.3		2.60
20		(6.8)							2.60
21		(6.6)							(2.65)
22		(6.4)							(2.55)
23		(5.2)							(2.60)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 18

Reykjavik, Iceland (64.1°N, 21.8°W)									September 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		---						3.4	---
01		---						3.0	---
02		---						3.0	---
03		---						2.9	---
04		---						3.4	---
05		(5.0)							---
06		5.7							2.80
07		6.4							2.90
08		6.9				117	2.80		2.85
09		7.2		---	115	3.10			2.80
10		8.0		---	119	(3.30)			2.75
11		8.2		---	111	(3.30)			2.70
12		8.4		---	109	3.50			2.65
13		8.1		4.8	111	3.40			2.70
14		8.2		4.7	111	3.35			2.70
15		8.0		---	117	(3.20)			2.70
16		7.9		---	114	(3.00)			2.75
17		7.4		---	119	2.80			2.75
18		(7.7)			(135)	2.80			2.75
19		(5.8)			---	---			(2.70)
20		(5.7)			---	---	2.8		---
21		---			---	---	3.5		---
22		---			---	---	3.2		---
23		---			---	---	3.9		---

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 19

Anchorage, Alaska (61.2°N, 149.9°W) September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.4					2.8	2.40
01		(4.3)					2.2	2.40
02		4.5					1.6	2.35
03		4.4					2.5	2.40
04		4.3						2.35
05		4.4					1.7	2.50
06		5.1			111	1.90		2.65
07		6.0		3.9	111	2.50		2.65
08		6.1		4.3	112	2.90		2.65
09		6.6		4.5	112	3.10		2.50
10		7.0		(4.7)	109	3.30		2.50
11		6.8		4.8	109	3.40		2.50
12		7.0		5.0	111	(3.50)		2.50
13		7.4		5.0	113	3.50		2.50
14		7.6		4.8	113	3.30		2.60
15		7.8		4.6	113	3.10		2.65
16		7.4		---	117	2.80		2.70
17		7.1		---	119	2.45		2.75
18		7.3		---	121	2.00		2.80
19		7.0						2.70
20		5.6						2.65
21		5.2					2.2	2.75
22		4.9					2.6	2.65
23		(4.4)					3.1	2.60

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 20

Adak, Alaska (51.9°N, 176.6°W) September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)	330		---	---		(2.45)
01		(4.0)	340		---	---		2.40
02		(3.9)	<340		---	---		2.40
03		3.7	340		---	---		2.40
04		(3.7)	350		---	---		(2.50)
05	---	4.0	310		---	191	E	2.55
06	6	5.4	270	3.2	110	(2.25)		2.75
07	6	6.0	250	3.8	109	2.85		2.80
08	6	6.9	240	4.3	111	3.20	3.2	2.85
09	6	7.6	235	4.5	109	3.50		2.80
10	6	8.6	230	4.7	111	(3.60)		2.80
11	6	8.8	230	4.8	108	(3.75)		2.75
12	470	9.2	230	5.0	111	(3.75)		2.75
13	(680)	9.4	235	4.8	111	(3.60)		2.80
14	(555)	9.1	240	4.6	111	(3.50)		2.70
15	---	8.8	240	---	109	3.20		2.80
16	---	8.5	250	---	111	(2.90)		2.85
17	---	8.6	250	---	114	(2.50)		2.85
18	---	7.8	255		135	---		2.85
19		7.4	250		---	---		2.80
20		6.7	255		---	---		2.80
21		6.0	260		---	---		2.80
22		5.3	270		---	---		2.65
23		(4.8)	290		---	---		2.55

Time: 180.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 21

Pt. Monmouth, New Jersey (40.3°N, 74.1°W) September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	270					2.60
01		6.1	275					2.60
02		5.8	<270				(3.2)	2.65
03		5.4	<270				(2.2)	2.60
04		5.2	<260				(3.7)	2.70
05		4.8	<260					2.70
06		6.4	250		<115	2.10		3.00
07	---	8.3	240	---	111	2.85		3.05
08	G	9.4	230	---	109	3.40		3.05
09	---	9.7	220	4.5	107	3.70		2.95
10	---	10.2	220	---	109	3.90		2.85
11	(630)	10.2	220	5.0	109	4.00		2.75
12	(665)	10.2	220	5.0	109	4.00		2.70
13	(500)	10.3	225	5.0	105	4.00		2.70
14	490	10.2	230	5.0	107	3.85		2.65
15	(545)	10.2	235	4.8	109	3.60		2.70
16	(550)	10.2	240	---	109	3.20		2.70
17	---	10.2	245	---	114	2.60		2.80
18	---	10.0	245	---	---	---		2.85
19		9.4	235				(3.6)	2.80
20		8.3	<245				(3.3)	2.70
21		7.7	<250				(3.2)	2.70
22		7.0	<270				(3.9)	2.70
23		6.8	<280					2.65

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 22

White Sands, New Mexico (32.3°N, 106.5°W) September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.7	300					2.50
01		5.7	300				(3.7)	2.60
02		5.6	<315				(3.0)	2.55
03		5.4	<300					2.60
04		5.4	280				(2.7)	2.55
05		5.0	280				(3.2)	2.60
06		6.2	280		115	---		2.85
07	---	8.7	250	---	111	2.80		3.00
08	---	9.7	240	---	110	(3.30)		3.00
09	(460)	10.2	230	---	<111	3.80		2.85
10	---	11.0	230	---	111	4.00		2.70
11	(490)	11.1	230	---	109	4.00		2.65
12	380	11.3	230	---	109	4.10		2.60
13	380	11.3	230	---	111	4.10		2.60
14	(365)	11.4	235	---	111	4.00		2.60
15	(525)	10.8	240	4.8	111	3.80		2.60
16	(470)	10.6	240	4.5	<111	(3.35)		2.65
17	---	10.2	255	---	113	2.85	2.9	2.75
18		9.8	250		119	---	2.0	2.80
19		8.6	<240				3.0	2.80
20		7.0	<245				2.8	2.65
21		6.6	<275					2.65
22		6.3	(275)					2.60
23		6.1	280				(3.2)	2.60

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 23

Grand Bahama I. (26.6°N, 78.2°W) September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.4	290					2.65
01		7.0	290					2.60
02		6.9	275				(2.6)	2.70
03		6.4	255				(2.3)	2.70
04		6.0	270				(2.2)	2.65
05		5.7	270				(2.5)	2.70
06		6.5	265		115	1.85		2.80
07	---	9.0	235	---	110	2.70		3.00
08	---	10.4	230	---	109	3.50		3.00
09	---	11.8	220	---	103	3.75		2.85
10	---	12.0	215	---	105	4.00		2.75
11	(400)	12.3	225	---	109	4.20		2.70
12	(420)	12.2	220	6.1	109	4.25		2.70
13	(355)	12.2	220	6.5	109	4.20		2.60
14	(345)	12.0	230	---	109	4.10		2.60
15	---	11.7	230	---	109	3.85		2.65
16		11.5	235		109	3.50	3.8	2.70
17		11.0	250		109	3.00	3.2	2.70
18		10.5	245		111	2.00	2.1	2.75
19		9.3	230				(4.0)	2.75
20		8.2	250				(3.3)	2.70
21		8.0	260				2.6	2.70
22		7.8	270				3.1	2.65
23		7.4	290				(3.6)	2.65

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 24

Okinawa I. (26.3°N, 127.8°E) September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.3	265				3.1	2.85
01		12.2	265				3.1	2.80
02		11.1	250				3.2	3.00
03		9.3	230				(2.7)	2.90
04		7.6	235				(2.8)	2.75
05		>6.8	(240)				(2.6)	2.80
06		7.4	280					3.1
07		10.0	240				2.8	3.20
08		11.2	230		(121)	2.65	(3.30)	3.6
09		11.9	230		111	3.70		4.3
10		12.6	225		111	(3.95)		4.9
11	---	13.8	<230		(111)	(4.10)		4.8
12	(375)	14.6	225	---	(113)	4.20		4.9
13	375	15.5	230		(113)	(4.20)		4.9
14	380	16.0	230	6.8	(115)	(4.10)		4.9
15	365	15.6	240	---	111	3.95		4.4
16	345	15.0	<245		113	3.65		4.3
17	---	14.6	250		113	3.15		4.4
18		14.5	265		(119)	(2.25)		4.4
19		>14.5	260					3.6
20		>14.8	270					3.8
21		(16.8)	260					3.4
22		>15.3	275					3.9
23		14.0	270					3.1

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 25

Puerto Rico, W.I. (18.5°N, 67.2°W) September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.9	285				(3.1)	2.70
01		8.6	270				(2.8)	2.80
02		8.2	270				(2.7)	2.75
03		7.1	250				(2.5)	2.75
04		6.5	245				(2.1)	2.80
05		6.0	270				2.2	2.65
06		6.4	285				(2.4)	2.80
07	---	8.8	240	----	115	(2.55)		3.15
08	---	10.0	235	----	110	3.25	3.4	3.05
09	---	11.4	230	----	111	(3.65)	3.9	2.90
10	---	12.2	230	----	111	(4.00)	4.1	2.80
11	(340)	12.9	225	----	109	(4.20)		2.70
12	350	13.0	225	(6.4)	109	4.35		2.65
13	370	13.0	230	6.8	111	(4.30)		2.60
14	375	13.0	230	6.8	111	(4.20)	4.6	2.60
15	370	12.7	240	(6.8)	111	(4.00)	4.5	2.60
16	(315)	12.3	240	----	111	(3.70)	4.5	2.65
17	---	11.6	245	----	114	(3.10)	4.2	2.65
18	---	11.2	260		<121	(2.15)	3.2	2.70
19		10.4	255				3.1	2.70
20		9.6	260				3.3	2.65
21		9.4	275				3.2	2.60
22		9.1	285				3.1	2.65
23		9.1	280				(4.8)	2.70

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 27

Canberra, Australia (35.3°S, 149.0°E) September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	275					2.70
01		6.4	270					2.70
02		6.0	275					2.75
03		5.7	270					2.60
04		5.2	290					2.60
05		5.0	290					2.65
06	---	5.5	275		120	1.90		2.90
07	(630)	>8.2	245	----	110	2.70		3.05
08	(460)	10.0	240	4.4	105	3.20		3.10
09	(330)	11.0	230	4.8	105	3.50		3.00
10	(290)	11.2	225	(5.0)	105	3.75		2.90
11	(325)	>11.2	220	5.6	105	3.85		2.85
12	(320)	11.2	220	----	105	4.00		2.80
13	(290)	11.1	220	----	110	4.00		2.70
14	(330)	10.6	225	5.0	105	3.80		2.70
15	---	10.3	230	----	110	3.60		2.65
16	---	10.0	240	----	110	3.30		2.75
17	---	9.5	245	----	115	2.70		2.80
18		8.7	245	----	140	1.80		2.80
19		>8.6	250					2.70
20		>7.9	260					2.70
21		>7.5	260					2.75
22		>7.0	270					2.80
23		6.8	275					2.70

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 29

Sodankylä, Finland (67.4°N, 26.6°E) August 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.2)			----	3.6	(2.65)	
01		(7.0)			----	3.6	(2.65)	
02		(6.5)			----	3.9	(2.60)	
03		(6.0)			----	3.3	(2.60)	
04		6.0				1.60	3.8	(2.70)
05		6.2				2.05	3.7	2.80
06		6.4				2.60	4.2	2.75
07		6.7				2.90	4.4	2.75
08		7.1				3.10	4.4	2.80
09		6.8				3.30	4.4	2.75
10		7.0				3.40	4.2	2.65
11		7.1				3.45	4.6	2.65
12		7.1				3.50	4.3	2.65
13		7.0				3.50	4.4	2.70
14		7.0				3.45	4.4	2.75
15		7.0				3.40	4.3	2.75
16		7.0				3.25	4.3	2.75
17		7.4				3.00	3.9	2.85
18		7.1				2.85	4.0	2.05
19		6.9				2.50	3.6	2.90
20		6.4				2.15	3.3	2.85
21		6.4				1.65	3.3	2.85
22		7.0				1.60	3.5	2.80
23		6.9				E	3.4	(2.70)

Time: 30.0°E.

Sweep: 1.4 Mc to 22.6 Mc in 8 minutes, automatic operation.

Table 26

Baguio, P.I. (16.4°N, 120.6°E) September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.2	270					2.90
01		13.2	260					3.00
02		10.4	240					2.90
03		8.2	250					2.80
04		7.8	260					2.80
05		6.9	260					2.95
06		8.0	290					2.80
07		10.5	270			145	(2.00)	2.6
08		12.0	260			125	(2.05)	3.6
09		13.2	250			121	(3.40)	4.8
10		13.8	250			121	(3.85)	4.8
11	---	14.0	<245			121	(4.05)	5.0
12	---	13.4	245			122	(4.15)	4.0
13	---	13.4	250			121	(4.25)	2.10
14	---	14.0	250	---		121	4.20	2.15
15		14.0	255			123	(3.85)	2.20
16		14.0	270			121	(3.40)	5.0
17		13.6	290			129	(2.75)	4.0
18		12.8	<330			---	----	4.0
19		12.3	420					3.0
20		12.0	370					2.3
21		(12.2)	320					2.8
22		12.8	295					3.5
23		13.5	280					2.0

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 28

Fletchers Ice I. (82.0°N, 101.0°W) August 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	5.6	270	---	<115	2.20		2.70
01	---	5.7	265	---	124	2.20		2.75
02	(400)	5.7	275	3.6	119	(2.20)		2.65
03	<390	5.5	260	3.6	121	2.20		2.75
04	---	5.5	260	---	119	2.30		2.80
05	(480)	5.5	255	(3.9)	118	(2.30)		2.75
06	(490)	5.6	255	4.0	113	----		2.70
07	350	5.8	<250	4.0	111	2.50		2.75
08	(400)	5.9	250	4.1	112	2.60		2.75
09	375	5.8	240	4.2	109	----		2.70
10	<400	5.6	235	4.2	104	(2.70)		2.65
11	408	6.0	240	4.4	105	2.85		2.65
12	400	5.8	230	4.4	103	----		2.65
13	420	5.6	220	4.3	103	----		2.60
14	445	5.5	225	4.3	104	----		2.50
15	465	5.3	<225	4.3	103	(2.70)		2.55
16	435	5.6	<235	4.2	103	2.85		2.50
17	400	5.5	240	4.2	105	2.85		2.55
18	470	5.3	250	4.2	109	----		2.45
19	420	5.2	<250	4.0	111	----		2.60
20	450	5.3	<255	4.1	112	----		2.55
21	440	5.5	255	3.8	111	(2.55)		2.65
22	(400)	5.8	260	3.7	111	(2.30)		2.65
23	(420)	5.8	260	3.7	119	2.30		2.75

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 30

Lulea, Sweden (65.6°N, 22.1°E) August 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.0	300					<2.5
01		>7.0	310					<1.7
02		(7.0)	300					<1.9
03		(6.6)	310					<1.7
04	<430	(6.0)	270	>3.4	----	1.8		----
05	<310	>6.0	250	----	120	2.5		----
06	(380)	6.6	240	4.2	110	3.0		----
07	(360)	7.2	240	4.6	110	3.2		----
08	370	7.4	230	5.0	105	3.5		(2.8)
09	390	7.6	225	5.2	110	3.5		----
10	(380)	7.5	220	5.3	105	3.6		(2.7)
11	360	>7.5	210	5.3	100	3.6		----
12	390	7.5	210	5.5	110	3.6		----
13	340	7.4	210	5.2	105	3.6		----
14	---	7.3	225	----	110	3.5	<3.6	(2.8)
15	<310	7.3	225	5.0	110	3.5		----
16	---	7.4	230	----	110	3.3		----
17	---	7.3	240	----	115	3.0	<3.2	----
18	---	7.2	250		120	2.6	3.5	----
19		>7.2	260		130	2.2	2.8	----
20		>6.7	260		140	1.8	<2.2	----
21		>6.0	260		----	----	<2.4	----
22		>6.0	270				2.1	----
23		>6.6	(275)				<2.0	----

Time: 15.0°E.

Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

Table 31

Baker Lake, Canada (64.3°N, 96.0°W)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.2	290		---	---	5.0	
01		5.4	270		---	---	5.2	
02		5.0	270		130	1.2	4.6	
03		4.8	270		---	1.4	5.0	
04		5.0	280		120	1.7	4.3	
05		5.0	280	---	110	2.0	4.8	---
06	(360)	5.4	250	3.8	105	2.3	5.0	---
07	430	5.8	230	4.4	105	2.8	5.0	---
08	400	5.8	220	4.6	100	3.0	5.1	---
09	430	5.9	220	4.7	100	3.4	5.0	---
10	480	6.0	220	5.0	100	3.6	6.0	---
11	460	6.4	220	5.0	100	3.6	6.0	---
12	410	6.4	220	5.0	100	3.6	5.4	---
13	440	6.9	210	5.0	100	3.7	5.4	(2.6)
14	430	7.1	210	5.0	100	3.6	5.0	(2.8)
15	400	6.7	220	4.8	100	3.5	---	---
16	400	6.5	230	4.8	100	3.4	5.0	---
17	400	6.5	230	4.6	100	3.1	4.5	---
18	350	6.3	240	4.3	105	2.8	5.0	---
19	---	6.1	280	3.8	110	2.5	5.5	---
20		6.0	280		120	2.1	6.0	---
21		5.0	280		120	1.6	6.3	---
22		5.5	280		140	1.4	5.7	---
23		5.2	200		---	---	5.0	---

Time: 90.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 32

Reykjavik, Iceland (64.1°N, 21.8°W)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		---					4.3	
01		---			---	---	4.0	
02		---			---	---	4.0	
03		(4.2)			---	---	3.7	---
04		(4.9)			---	---	3.8	(2.75)
05		5.4			111	2.10	2.3	2.80
06		5.7			111	2.40		2.90
07		6.0		---	109	>2.70		2.80
08		6.6		4.4	109	3.00		2.80
09		6.8		4.7	103	3.25		2.85
10		7.0		4.9	106	3.40		2.85
11		7.0		5.0	108	(3.50)		2.70
12		7.0		4.9	105	(3.50)		2.65
13		7.3		5.0	103	3.55		2.70
14		7.0		5.0	105	3.50		2.70
15		7.3		4.9	109	3.45		2.70
16		7.0		(4.7)	109	3.30		2.70
17		6.6		4.5	109	3.00		2.70
18		(6.5)		---	111	2.85		(2.80)
19		6.4			120	2.90	3.4	2.80
20		(6.2)			121	3.00	3.3	---
21		---			---	---	3.7	---
22		---			---	---	4.4	---
23		---			---	---	4.2	---

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 33

Slough, England (51.5°N, 0.6°W)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.5	310				2.8	2.50
01		6.2	310				3.2	2.45
02		5.9	310			---	3.0	2.45
03		5.6	300				3.0	2.50
04		5.2	295				3.0	2.55
05		5.4	280		170	<1.25	3.0	2.75
06	365	6.5	250	---	125	2.40	3.4	2.90
07	420	7.4	245	4.5	115	2.90	3.6	2.80
08	370	7.6	240	5.2	115	3.25	4.2	2.75
09	335	8.1	230	5.3	115	<3.60	4.4	2.75
10	340	8.4	230	5.4	110	3.70	4.7	2.75
11	365	8.3	215	5.5	110	3.80	4.6	2.65
12	365	8.6	220	5.6	110	3.90	4.8	2.65
13	390	8.3	220	5.6	110	3.80	4.8	2.70
14	380	8.2	225	5.6	110	3.80	4.2	2.65
15	360	8.2	230	5.5	110	3.70	3.8	2.65
16	360	8.3	235	5.4	110	3.40	3.6	2.75
17	315	8.1	245	---	115	3.05	3.4	2.70
18		8.3	255		120	2.60	3.6	2.75
19		8.3	270		130	1.90	3.5	2.70
20		8.2	265			<1.60	3.0	2.70
21		7.8	260			<1.60	2.3	2.60
22		7.2	285			---	2.2	2.50
23		6.9	300			---	2.8	2.50

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 34

Winnipeg, Canada (49.9°N, 97.4°W)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.8	290				<1.6	2.75
01		4.4	300				<1.8	2.7
02		4.1	310				3.0	2.6
03		4.0	300				3.2	2.7
04		3.9	300				3.0	2.7
05		3.9	290			---	---	2.75
06	300	5.0	270		110	2.2		3.0
07	310	5.6	240	4.0	110	2.8		2.95
08	380	6.0	220	4.6	105	3.1		2.8
09	400	6.2	210	4.9	100	3.5		2.7
10	430	6.5	210	5.0	100	3.7		2.6
11	440	6.9	200	5.1	100	3.9		2.6
12	480	7.0	200	5.2	100	4.0		2.5
13	440	6.9	210	5.2	100	4.0		2.5
14	460	6.9	210	5.2	100	3.9		2.55
15	450	6.9	210	5.1	100	3.8		2.55
16	400	6.8	220	5.0	100	3.6		2.7
17	380	6.9	220	---	100	3.2		2.7
18	320	6.8	240	---	105	2.8		2.8
19	300	6.9	260		120	2.3		2.9
20		6.8	280		---	1.8		2.9
21		6.2	270				3.0	2.8
22		5.9	270				<1.8	2.8
23		5.0	280				<1.6	2.9

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 35

Budapest, Hungary (47.4°N, 19.2°E)								August 1957
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	6.6					3.0	2.79
01	330	6.5					2.8	2.79
02	320	6.2					2.3	2.86
03	315	5.9					2.3	2.86
04	300	5.6						2.95
05	295	5.7	---	---	---	1.9		2.97
06	265	6.6	250	4.1	130	2.4	3.2	3.16
07	275	7.6	250	4.7	125	2.9	4.0	3.10
08	315	8.2	245	5.0	120	3.3	4.4	2.86
09	315	8.8	245	5.2	120	3.4	4.8	2.86
10	340	9.4	250	5.6	120	3.6	4.8	2.74
11	360	9.2	250	5.8	120	3.8	4.7	2.65
12	365	9.4	260	5.9	120	3.9	4.6	2.63
13	360	9.0	250	5.8	120	3.9		2.65
14	360	8.8	250	5.8	120	3.8	4.0	2.65
15	355	8.5	240	5.7	120	3.5		2.69
16	335	8.4	255	5.2	120	3.2		2.77
17	295	8.4	255	4.6	125	3.0	3.2	3.00
18	280	8.2	260	4.2	130	2.5	3.4	3.06
19	275	8.3	---	---	---	---	2.8	3.10
20	275	8.0					2.5	3.10
21	290	7.5					3.0	3.00
22	290	7.2					3.0	3.00
23	315	7.0						2.86

Time: Local time.

Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 36

Wakkanai, Japan (45.4°N, 141.7°E)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.3	300				3.2	2.60
01		7.0	300				3.2	2.55
02		6.8	300				3.5	2.55
03		6.7	290				2.6	2.55
04		6.5	290			---	2.8	2.60
05		7.0	265			2.00	2.4	2.75
06	---	8.0	250	---		2.60	3.4	2.80
07	---	8.7	250	---		3.10	4.8	2.90
08	(375)	8.8	230	5.4		3.40	5.3	2.90
09	310	8.4	220	5.6		3.55	5.3	2.80
10	350	8.6	220	5.6		3.60	5.4	2.75
11	380	0.8	220	5.7		3.60	5.3	2.75
12	365	8.7	250	5.6		3.70	5.0	2.75
13	365	8.5	260	5.5		3.80	4.5	2.75
14	370	8.8	270	5.7		3.60	4.8	2.70
15	345	8.5	265	5.3		3.50	4.2	2.75
16	---	8.3	250	---		3.30	4.0	2.80
17		8.3	250			2.75	4.1	2.85
18		8.3	270			2.05	4.5	2.85
19		8.5	265				4.8	2.80
20		8.2	275				4.4	2.75
21		8.0	275				3.5	2.65
22		7.6	280				3.5	2.60
23		7.3	290				3.4	2.60

Time: 135.0°E.

Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 37

Akita, Japan (39.7°N, 140.1°E)									
August 1957									
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		7.8	300				3.1	2.60	
01		7.5	300				3.1	2.60	
02		7.4	300				3.0	2.60	
03		7.0	295				3.0	2.55	
04		6.7	300				2.6	2.60	
05	---	7.2	280	---		1.70	3.0	2.70	
06	270	8.4	250	---		2.50	3.5	2.90	
07	260	9.3	245	4.6		3.05	4.0	3.00	
08	270	9.4	235	5.3		3.45	4.5	2.85	
09	300	9.4	225	5.6		3.60	5.3	2.85	
10	340	9.2	210	6.0		3.80	4.9	2.75	
11	350	9.6	220	6.0		3.85	5.2	2.70	
12	350	9.9	230	6.0		3.95	5.2	2.70	
13	350	9.6	240	5.9		4.00	4.7	2.70	
14	350	9.5	240	5.8		3.90	4.7	2.70	
15	340	9.5	240	5.5		3.55	4.5	2.75	
16	325	9.2	250	---		3.30	4.0	2.75	
17	300	9.1	250	---		2.80	4.7	2.80	
18	---	9.2	275			2.00	4.6	2.85	
19		8.8	265				4.1	2.80	
20		8.2	270				3.8	2.70	
21		8.1	295				4.5	2.65	
22		8.1	300				4.2	2.60	
23		8.0	300				3.7	2.60	

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 38

Tokyo, Japan (35.7°N, 139.5°E)									
August 1957									
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		8.1	330				3.2	2.50	
01		8.3	325				2.5	2.50	
02		7.7	310				2.4	2.60	
03		7.4	300					2.55	
04		7.1	310					2.50	
05		7.5	300					2.60	
06	(300)	8.9	260				2.50	3.0	2.90
07	280	9.7	250	---			3.10	3.6	2.90
08	290	9.6	250	5.1			3.40	4.2	2.85
09	340	9.5	250	5.7			3.75	5.2	2.70
10	360	9.6	250	5.9			3.90	5.2	2.60
11	375	10.4	260	6.1			---	5.7	2.55
12	380	11.0	250	6.0			---	4.9	2.55
13	365	10.7	250	6.0			4.00	4.7	2.55
14	375	10.6	250	5.8			3.95	4.0	2.60
15	355	10.3	255	5.6			3.70	4.2	2.65
16	355	10.2	255	5.4			3.40	4.4	2.65
17	320	10.1	275	---			2.85	5.0	2.70
18	(305)	9.9	285				2.05	4.8	2.75
19		9.5	280					4.2	2.75
20		8.5	300					4.0	2.55
21		8.6	320					3.6	2.50
22		8.6	320					3.9	2.50
23		8.4	320					4.0	2.55

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 39

Yamagawa, Japan (31.2°N, 130.6°E)									
August 1957									
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		9.0	290				3.2	2.70	
01		8.8	295				3.0	2.70	
02		8.5	280				3.1	2.75	
03		8.0	260				2.8	2.80	
04		7.6	250				2.6	2.80	
05		7.2	255				2.8	2.80	
06		8.0	250			1.85	3.0	3.00	
07	(250)	9.4	235	---		2.75	3.5	3.25	
08	245	9.4	230	---		3.30	4.4	3.20	
09	(245)	9.4	220	---		3.65	5.2	2.95	
10	(350)	9.8	225	---		3.90	5.3	2.75	
11	355	10.8	220	6.3		4.05	5.2	2.70	
12	350	11.4	220	6.3		4.10	5.5	2.70	
13	350	11.7	230	6.3		4.10	5.5	2.70	
14	350	11.7	230	6.2		4.00	5.2	2.70	
15	345	11.9	240	6.1		3.90	5.6	2.75	
16	325	11.9	240	5.8		3.60	5.7	2.80	
17	305	11.6	250	---		3.20	5.1	2.80	
18	290	11.4	255	---		2.50	5.0	2.90	
19		11.0	250				4.4	2.90	
20		10.0	255				4.0	2.80	
21		9.5	290				3.8	2.65	
22		9.6	295				3.2	2.65	
23		9.3	290				3.2	2.70	

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 40

Baguio, P.I. (16.4°N, 120.6°E)									
August 1957									
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		13.0	310					2.70	
01		13.5	280					2.90	
02		11.0	255					2.95	
03		9.0	245					2.80	
04		7.3	260					2.80	
05		6.3	260					2.85	
06		7.8	300					4.0	2.85
07		9.5	275			<147	(1.95)	5.3	2.80
08		9.9	260			129	(2.95)	7.0	2.60
09		10.7	245			127	(3.40)	7.0	2.25
10		11.2	240			129	(3.80)	6.9	2.15
11		12.0	230			128	(4.15)	5.0	2.10
12		12.5	240	---		129	(4.20)	4.5	2.10
13	---	12.8	240	---		129	4.20		2.05
14	---	13.0	245	---		129	4.00		2.10
15	---	13.3	250	---		125	3.80	4.0	2.10
16	---	13.4	265	---		127	3.40	4.0	2.25
17	---	13.1	280	---		129	(2.90)	3.8	2.25
18		12.8	310			139	2.05	3.8	2.25
19		12.0	375					3.0	2.10
20		(11.6)	420					2.4	(2.10)
21		11.5	370					2.8	2.30
22		11.4	350					2.6	2.40
23		11.6	340					2.0	2.55

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 41

Leopoldville, Belgian Congo (4.4°S, 15.2°E)									
August 1957									
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	205	11.0						2.78	
01	220	8.8					2.0	2.58	
02	235	7.3					2.3	2.60	
03	245	6.0					2.4	2.63	
04	240	4.6					2.0	2.75	
05	260	5.6	---	---			2.6	2.73	
06	255	9.7	245	---	115	2.7	3.6	2.96	
07	265	11.0	235	---	110	3.3	4.1	2.83	
08	275	11.9	220	---	110	3.8	4.8	2.71	
09	295	12.0	215	---	105	4.0	4.7	2.56	
10	345	12.3	205	---	105	4.0		2.39	
11	380	12.6	210	---	105	4.1		2.32	
12	395	13.0	215	---	105	4.1		2.23	
13	420	14.0	220	---	105	4.0		2.19	
14	410	14.0	230	---	110	3.8		2.19	
15	385	14.0	240	---	110	3.3	3.4	2.21	
16	350	14.1	250	---	115	2.7		2.30	
17	310	15.0	270	---			3.2	2.40	
18	280	15.0					3.1	2.47	
19	280	15.6					3.0	2.47	
20	220	17.0					2.5	2.47	
21	210	15.2						<2.68	
22	210	15.0						2.73	
23	205	13.0						2.71	

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 42

Elisabethville, Belgian Congo (11.6°S, 27.5°E)								August 1957
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.3						2.50
01	250	3.8						2.47
02	265	3.6						2.60
03	250	3.4					1.6	2.72
04	265	4.0					1.7	2.65
05	245	8.6			120	2.3	2.9	2.94
06	250	10.6	240	---	110	3.1		2.94
07	260	11.0	230	---	105	3.6	3.8	2.82
08	275	11.4	220	---	110	3.9	4.3	2.70
09	290	11.2	230	---	110	4.0		2.58
10	300	11.0	230	---	105	4.0		2.50
11	350	11.0	240	---	105	4.0	4.2	2.40
12	365	11.0	245	---	105	3.9	4.0	2.31
13	360	11.2	240	5.6	110	3.7		2.33
14	330	11.3	240	---	110	3.4	4.0	2.35
15	(305)	11.3	255	---	120	2.8	3.6	2.42
16	260	11.3	---	---			3.5	2.54
17	250	11.4					3.0	2.63
18	250	11.7					3.0	2.70
19	230	11.6					2.4	2.76
20	230	11.7					2.5	2.71
21	225	10.2					1.8	2.79
22	215	8.8						2.76
23	220	6.5						2.72

Table 43

Townsville, Australia (19.3°S, 146.7°E)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	250					3.10
01		6.5	250					3.10
02		6.0	240					3.00
03		4.6	220				2.1	3.00
04		4.1	250					2.80
05		4.0	290				2.1	2.75
06		4.2	270					2.90
07		>7.5	250		140	(2.20)		(3.30)
08		>9.9	240		100	3.00		----
09	(250)	>11.0	230		100	3.40		----
10	(260)	12.4	220		100	3.65	3.9	3.15
11	260	12.0	220		100	3.60	4.2	3.10
12	270	11.3	205		100	3.60	4.2	3.00
13	285	>11.0	210		100	3.60	4.1	2.95
14	(335)	11.0	220		100	3.70	4.2	(2.90)
15	(300)	>11.0	210		100	3.55	3.9	2.85
16	----	>10.0	240		100	3.30	3.6	----
17		>8.4	250		115	2.70		----
18		>8.0	250		130	<1.80		----
19		>7.5	250		----	----		----
20		>7.0	250					(2.80)
21		>6.5	250					----
22		>6.6	250					----
23		>7.0	250					(2.90)

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 44

Rarotonga I. (21.2°S, 159.8°W)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.6	250					3.25
01		7.4	240					3.30
02		6.2	<250					3.30
03		5.4	240					3.30
04		4.9	<250					3.25
05		4.2	250				2.0	3.20
06		4.2	<280				2.4	3.10
07		6.0	290				3.0	3.25
08		9.4	250		100	2.7	4.0	3.45
09	(250)	(12.1)	240		100	3.2	4.0	(3.40)
10	280	(12.9)	240		100	3.7	3.9	3.30
11	280	13.1	230	----	100	3.9		3.30
12	280	(11.4)	230	----	100	3.9		(3.30)
13	(320)	(11.7)	210	----	100	3.9		(3.20)
14	(340)	(11.3)	200	----	100	3.9		(3.10)
15	(340)	(11.8)	210	----	100	3.8	3.9	(3.10)
16	(350)	(12.2)	230	6.0	100	3.4	3.9	3.10
17	(300)	(12.9)	250		100	3.0	4.0	(3.10)
18		(13.0)	260		100	2.2	3.0	(3.30)
19		(12.9)	250				3.0	(3.30)
20		----	250				3.0	----
21		(9.0)	250				3.0	(3.10)
22		(8.6)	250				2.3	(3.30)
23		(8.3)	250					(3.15)

Time: 150.0°W.

Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 45

Sao Paulo, Brazil (23.5°S, 46.5°W)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		11.0	230				<2.1	3.20
01		10.2	230				<2.1	3.20
02		9.1	230				<2.1	3.25
03		8.0	220				<2.1	3.20
04		5.8	240				<2.1	3.05
05		4.7	250				<2.1	3.00
06		4.2	270			----	<2.1	2.90
07		7.8	245			<2.30		3.20
08		9.7	240			2.90		3.20
09		11.4	230			3.30		3.00
10		13.2	220			3.60		3.00
11		13.2	215			3.80		2.90
12		13.0	210			3.90		2.80
13		13.0	215			3.90		2.70
14		13.6	210			----		2.70
15		14.0	230			3.40		2.75
16		14.0	240			3.20		2.80
17		14.2	250			2.60		3.00
18		14.0	240				<2.2	3.05
19		13.6	230				<2.1	3.15
20		12.9	240				<2.1	3.00
21		12.2	240				<2.1	3.00
22		12.5	240				<2.1	3.00
23		11.7	230				<2.1	3.10

Time: 45.0°W.

Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 46

Johannesburg, Union of S. Africa (26.2°S, 28.0°E)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.5	<250				<1.6	2.80
01		3.4	<280				<1.6	2.75
02		3.4	<280				<1.6	2.80
03		3.2	<240				<1.6	2.90
04		3.1	<250				<1.6	2.80
05		3.1	<280				<1.6	2.85
06		3.4	<255			<1.6	<1.6	2.90
07	----	7.2	235			2.4		3.30
08	235	9.4	230			2.9		3.30
09	250	10.7	220			3.4		3.15
10	250	11.2	220	----		3.6		3.05
11	255	11.6	210	5.5		3.8		2.95
12	270	11.2	210	5.6		3.9		2.85
13	275	11.2	210	5.4		3.8		2.80
14	260	11.2	210	4.9		3.8		2.75
15	270	10.9	225	----		3.5	3.6	2.75
16	250	10.9	230	----		3.1	3.2	2.80
17	----	10.6	240			2.6	2.7	2.85
18		10.2	230			<1.7		2.95
19		8.6	220				<1.8	3.10
20		6.8	220				2.0	3.10
21		5.8	235				<1.8	3.10
22		5.0	240				<1.8	3.10
23		4.0	240				<1.7	2.95

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 47

Brisbane, Australia (27.5°S, 152.9°E)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.2	260					2.75
01		5.8	260					2.75
02		5.8	250					2.80
03		5.2	240					2.75
04		5.0	250					2.70
05		4.8	260			----	E	2.70
06		6.0	250			----	E	2.90
07		9.0	240		120	2.60		3.15
08		10.8	230		120	3.20		3.20
09		11.8	230		110	3.50		3.10
10		11.7	220		110	3.80		3.00
11		11.0	220		110	3.80		2.95
12		10.8	220		110	3.85	4.0	2.85
13		10.5	210		110	3.80	3.8	2.80
14		10.5	220		120	>3.60	3.8	2.80
15		10.0	230		120	3.40		2.80
16		9.9	240		125	2.90		2.80
17		9.6	240		130	2.25		2.85
18		8.9	230			----	E	2.85
19		7.9	240			----	----	2.75
20		7.8	250					2.75
21		7.0	250					2.80
22		6.6	250					2.75
23		6.4	250					2.75

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 48

Capetown, Union of S. Africa (34.1°S, 18.3°E)								August 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.9	<280				<1.5	2.80
01		2.9	<295				<1.5	2.70
02		3.0	<300				<1.5	2.75
03		3.0	<290				<1.4	2.75
04		3.0	<270				<1.4	2.85
05		2.9	<270				<1.4	2.85
06		3.0	<280				<1.5	2.80
07		3.8	<255			<1.4	<1.5	2.85
08		7.3	230			2.3		3.30
09	(250)	9.2	240			2.9		3.20
10	(250)	10.0	230			3.3		3.05
11	255	11.2	230			3.6		2.95
12	255	11.6	225	----		3.7		2.85
13	275	11.6	220	----		3.7		2.80
14	295	12.0	220	5.1		3.7		2.80
15	280	11.8	235	----		3.6		2.80
16	270	11.4	235			3.3		2.75
17	----	11.2	245			2.9		2.85
18		10.9	235			2.1		2.95
19		8.9	220				<1.5	3.05
20		6.6	225				<1.6	3.10
21		5.6	230				1.6	3.20
22		4.2	230				<1.5	3.15
23		3.1	<250				<1.5	2.95

Time: 30.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 49

Hobart, Tasmania (42.9°S, 147.2°E)								
August 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7	290					2.65
01		4.4	300					2.70
02		4.4	300					2.65
03		4.3	290					2.70
04		4.1	270					2.75
05		3.7	270					2.70
06		3.5	270					2.75
07		5.2	250					3.00
08		>7.7	240					3.05
09		9.4	240		---	3.10		3.10
10		>10.2	230		120	3.30		3.10
11		10.8	230		120	3.50		3.00
12		11.1	230		120	3.60		2.90
13		11.2	230		120	3.60		2.90
14		>11.0	230		120	3.50		2.85
15		>10.0	230		120	3.25		(2.80)
16		>9.0	240		---	---		---
17		>7.7	240		---	---		---
18		>7.7	240					---
19		>7.7	240					2.80
20		7.3	240					2.80
21		(6.3)	250					(2.80)
22		>5.5	260					2.75
23		5.3	280					2.70

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 50

Christchurch, New Zealand (43.6°S, 172.0°E)								
August 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	300				<1.8	2.60
01		5.9	300				<1.8	2.60
02		5.2	270				<1.8	2.60
03		5.0	280				<1.9	2.65
04		4.9	260				<1.7	2.70
05		4.3	260				<1.7	2.70
06		4.0	260				<1.9	2.70
07		4.9	260				<1.9	2.80
08		7.7	240		115	2.4		3.20
09		0.8	240		110	3.0		3.20
10		10.0	230		105	(3.2)	<3.4	3.15
11		10.6	240		105	3.5		3.00
12		10.9	230		---	---	3.8	3.10
13		11.0	230		100	3.7	<3.0	3.00
14		11.0	240		105	3.6		3.00
15		10.2	240		110	3.4	3.4	2.95
16		10.0	240		110	2.5		3.00
17		9.3	240		115	2.5	<2.6	3.00
18		8.9	240		---	(1.7)	<2.2	3.00
19		8.2	250				<2.2	2.80
20		7.4	250				<2.3	2.80
21		6.4	250				<2.2	2.70
22		6.2	260				<2.2	2.70
23		6.0	280				<2.2	2.65

Time: 100.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 51

Campbell I. (52.5°S, 169.2°E)								
August 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7	<290				2.2	2.7
01		4.5	280				<1.7	2.7
02		4.2	280				2.7	2.7
03		3.9	<280				<1.5	2.7
04		3.8	<270				<1.5	2.8
05		3.7	260				<1.5	2.9
06		3.5	<260				<1.5	2.8
07		5.4	250		---	---		3.0
08		7.2	240		140	1.8		3.1
09		(250)	8.2	230	---	120	2.4	3.1
10		250	9.4	230	4.2	120	3.0	3.0
11		250	9.8	230	4.2	120	3.1	3.0
12		250	10.6	230	4.5	120	3.1	3.0
13		250	10.7	220	4.3	115	3.1	3.0
14		240	10.4	230	4.0	115	2.9	3.0
15		(250)	10.2	230	3.8	120	2.6	3.0
16		9.4	240		120	2.2		3.0
17		9.0	240		---	1.6		2.9
18		8.0	230				<1.5	2.9
19		7.2	<250				<1.5	2.8
20		6.0	250				<1.5	2.8
21		6.0	250				<1.5	2.0
22		5.5	<270				1.8	2.7
23		5.1	270				<1.5	2.75

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

Table 52

Scott Base (77.8°S, 166.8°E)								
August 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.9)	300				<1.4	(2.85)
01		3.0	300				<2.0	(2.80)
02		3.6	300				2.0	(3.00)
03		3.5	<300				<1.2	---
04		3.5	280				<1.3	(3.00)
05		(3.7)	280				2.5	---
06		(3.6)	260		---	---	2.0	---
07		5.2	250		---	---	<1.2	---
08		(4.5)	250		---	---	<1.2	---
09		5.0	250		---	1.6	<1.8	(3.30)
10		6.2	250		170	1.7	2.2	(3.30)
11		6.9	250		150	1.7	2.8	(3.30)
12		6.6	250		<160	<1.7	2.4	3.30
13		6.6	260		140	<1.8	2.5	(3.30)
14		7.0	250		---	1.5	<2.2	3.20
15		7.8	250		---	1.4	<2.3	3.30
16		7.8	250		---	---	<1.2	(3.10)
17		7.8	250					3.20
18		0.0	250					3.00
19		7.5	250					3.05
20		7.0	250					(3.20)
21		5.9	270					3.05
22		5.4	<290					---
23		(4.3)	280				<1.1	(2.80)

Time: 165.0°E.

Table 53

Lulea, Sweden (65.6°N, 22.1°E)								
July 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.2	300				2.9	
01		>6.4	300				2.9	
02		6.0	300		250	1.8	2.0	
03		(6.2)	280		(3.6)	140	2.2	2.5
04		400	>6.3	250	(3.0)	120	>2.6	2.8
05		410	6.3	240	4.2	110	3.0	3.5
06		415	6.9	230	>4.5	110	3.2	3.6
07		330	7.2	235	5.2	110	3.4	3.7
08		410	>7.3	230	>5.2	110	3.5	3.7
09		300	7.5	230	5.4	110	3.6	3.8
10		410	7.5	230	5.5	105	3.6	4.0
11		410	7.3	220	5.5	105	3.6	4.0
12		410	7.4	225	(5.5)	105	>3.6	3.8
13		400	7.3	220	>5.6	105	3.6	3.6
14		390	7.4	220	5.5	<110	3.6	(2.6)
15		(400)	7.2	220	5.3	110	3.5	(2.6)
16		(360)	(7.0)	220	5.2	110	3.5	(2.6)
17		---	>6.9	240	>4.0	110	3.3	3.7
18		---	(7.0)	245	---	110	3.1	3.6
19		---	>7.0	250	---	120	2.6	3.7
20		---	(7.0)	260	---	130	2.3	2.9
21			>6.5	270	---	145	1.9	
22			>7.0	270	---	---		
23			>6.0	280				

Time: 15.0°E.

Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

Table 54

Dourbes, Belgium (50.1°N, 4.6°E)								
July 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.1	320				(1.8)	2.50
01		6.0	315				<1.8	2.50
02		6.4	310				<1.6	2.50
03		6.2	310				<2.0	2.50
04		6.0	<300		---	---	<2.2	2.60
05		6.4	265		121	2.30	2.8	2.60
06		(475)	6.8	250	---	<116	2.90	3.3
07		(400)	7.4	240	---	110	3.25	3.8
08		465	7.7	<235	5.0	111	(3.50)	<4.0
09		400	7.6	230	5.4	114	(3.70)	4.2
10		400	8.0	(230)	5.6	109	(3.00)	4.6
11		455	7.9	230	5.7	(111)	(3.85)	4.3
12		410	8.2	(225)	5.7	108	(3.95)	4.4
13		420	8.2	<230	5.7	111	(3.85)	4.2
14		410	0.0	(230)	5.6	111	(3.70)	4.3
15		395	7.9	(230)	5.7	<112	3.70	4.4
16		(400)	7.6	240	5.3	117	3.50	4.0
17		---	7.0	250	---	116	3.15	3.5
18		---	0.0	255	---	113	2.70	3.4
19		---	7.8	295	---	---	---	3.0
20			(7.7)	280			2.5	(2.65)
21			(7.9)	300			2.0	(2.55)
22			(7.5)	(300)			<1.9	(2.50)
23			(7.4)	310			<2.2	2.50

Time: 0.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 55

Paramaribo, Surinam (5,6°N, 55,2°W)								July 1957
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	370	10,8					3,2	2,40
01	320	11,8					3,2	2,50
02	300	12,2					3,1	2,65
03	280	11,7					3,0	2,75
04	265	9,9					3,0	2,75
05	280	9,1					3,0	2,75
06	280	8,8					3,0	2,90
07	260	8,7					2,8	2,85
08	250	8,2					2,9	2,85
09	250	6,7					3,1	2,95
10	245	7,7			130	2,3	3,2	3,00
11	220	8,3	---	---	105	3,0		2,95
12	220	9,1	210	---	100	3,6		2,70
13	---	10,2	210	---	100	3,9		2,50
14	(400)	11,4	210	5,8	100	4,1		2,50
15	400	11,9	210	6,1	100	4,2		2,50
16	400	12,5	210	6,0	105	4,3	4,8	2,50
17	410	12,0	210	6,2	100	4,2	4,7	2,50
18	400	12,8	210	6,2	100	4,0	5,2	2,50
19	390	12,6	220	6,0	100	3,8	5,0	2,50
20	400	12,1	220	5,7	100	3,4	5,0	2,50
21	(270)	11,6	240	---	---	3,0	5,0	2,40
22	300	11,0	---	---	---	1,9	4,8	2,40
23	370	10,7					4,2	2,40

Time: 0,0°.

Sweep: 1.4 Mc to 20,0 Mc in 40 seconds.

Table 56

Hobart, Tasmania (42,9°S, 147,2°E)								July 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4,2	290					2,70
01		4,4	300					2,65
02		4,3	300					2,65
03		4,3	300					2,70
04		4,1	280					2,70
05		3,8	260					2,85
06		3,4	260					2,85
07		3,7	270					2,85
08		7,4	240					3,10
09		9,4	240					3,30
10		10,6	240					3,20
11		11,3	250		130		3,10	3,10
12		>11,5	250		130		3,45	3,10
13		11,8	245		130		3,35	2,90
14		>11,5	250		130		3,20	3,00
15		11,6	240		---		3,00	3,00
16		10,6	250		---		---	3,00
17		10,5	240		---		---	2,95
18		9,8	250		---		---	(3,05)
19		>7,7	250		---		---	3,00
20		6,7	250		---		---	2,95
21		5,5	255		---		---	2,90
22		4,8	270		---		---	2,75
23		4,4	290		---		---	2,75

Time: 150,0°E.

Sweep: 1,0 Mc to 13,0 Mc in 1 minute 55 seconds.

Table 57

Cape Hallett (72,3°S, 170,3°E)								July 1957
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4,5	270		---	---	<1,4	---
01		3,7	275		---	---	<1,4	(2,55)
02		4,5	275		---	---	<1,6	(2,70)
03		4,3	270		---	---	<1,5	(2,40)
04		3,2	270		---	---	<1,5	---
05		3,1	265		---	---	<2,0	(2,25)
06		3,8	260		119	1,5	---	---
07		4,1	280		---	1,5	---	---
08		4,8	275		---	---	<1,5	---
09		5,3	250		---	---	<1,6	(2,55)
10		5,8	240		---	---	<1,7	(2,70)
11		5,8	250		113	1,7	<2,5	(2,85)
12		6,2	255		---	1,9	<2,1	---
13		6,0	260		---	1,9	<2,5	2,70
14		6,3	240		146	1,8	<1,9	(2,70)
15		6,6	260		---	---	<2,2	2,70
16		6,8	245		---	---	<2,3	2,70
17		7,1	255		---	---	<2,2	2,75
18		6,6	245		---	---	<2,3	(2,75)
19		6,6	235		---	---	<1,8	2,80
20		5,9	240		---	---	<1,4	(2,65)
21		6,0	240		---	---	<1,3	(2,50)
22		5,9	255		---	---	<1,2	(2,55)
23		4,8	250		---	---	<1,3	(2,60)

Time: 165,0°E.

Table 50

Leningrad, U.S.S.R. (59,9°N, 30,7°E)								April 1957
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6,9						2,5
01	320	6,4						2,5
02	340	6,0						2,5
03	340	5,8						2,5
04	320	5,8						2,5
05	300	6,0						2,6
06	280	6,5	240	2,6	100	2,2		2,7
07	280	6,8	240	4,0	120	2,6		2,7
08	300	7,6	240	4,5	100	3,0		2,7
09	320	8,2	240	5,3	100	3,4		2,7
10	320	8,4	230	5,5	100	3,7		2,6
11	360	9,2	240	5,7	100	3,9		2,6
12	360	9,8	220	5,8	100	4,0		2,6
13	380	10,0	220	5,9	100	4,0		2,6
14	320	10,0	220	5,8	100	4,0		2,6
15	300	10,5	240	5,8	100	3,9		2,6
16	300	10,5	240	5,2	100	3,8		2,7
17	300	10,5	240	5,3	100	3,5		2,7
18	260	9,1	240	5,2	100	3,2		2,7
19	260	9,1	240	4,5	100	2,7		2,8
20	260	9,1			120	2,3		2,8
21	260	8,2						2,7
22	260	7,7						2,7
23	300	7,0						2,6

Time: 30,0°E.

Sweep: 1,0 Mc to 18,0 Mc in 10 minutes, semiautomatic operation.

Table 59

Irkutsk, U.S.S.R. (52,5°N, 104,0°E)								April 1957
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	(6,6)						---
01	300	(5,8)						---
02	300	(5,6)						---
03	300	(5,6)						(2,6)
04	300	(5,6)						(2,8)
05	290	(5,9)						(2,8)
06	260	(7,7)		(4,0)	110	(2,0)		(2,8)
07	250	(8,2)	220	(4,4)	110	(2,8)		2,8
08	250	(9,4)	220	(4,4)	110	(3,2)		(2,6)
09	260	(10,8)	210	(4,5)	110	(3,4)		(2,8)
10	270	11,0	210	(4,9)	110	(3,6)		2,8
11	260	11,7	210	---	110	(3,8)		2,8
12	290	11,8	210	(6,3)	110	(3,9)		2,7
13	290	11,8	210	(6,4)	110	(3,8)		2,7
14	300	11,6	210	(6,6)	110	(3,7)		2,8
15	280	11,4	210	(4,6)	110	(3,5)		2,7
16	260	11,3	220	(4,4)	110	(3,4)		2,9
17	250	(10,6)	220	(4,2)	110	(3,1)		(2,8)
18	250	(10,3)						---
19	250	(9,0)			110	(2,4)		(2,8)
20	250	(9,5)						---
21	250	(8,4)						---
22	260	(8,6)						---
23	280	(7,6)						---

Time: 105,0°E.

Sweep: 1,0 Mc to 16,0 Mc in 1 minute.

Table 60

Townsville, Australia (19,3°S, 146,7°E)								December 1956
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		>8,4	280					2,0
01		>6,7	280					2,1
02		>7,0	295					2,4
03		>6,5	300					---
04		>6,5	300					---
05		>6,4	310					---
06		>6,4	250					---
07		9,6	240				2,35	---
08		10,0	235				3,00	3,3
09		11,0	230				3,50	4,1
10	(440)	11,1	230				3,85	4,7
11	410	11,9	210	6,2			4,00	4,6
12	425	12,0	220	6,5			4,15	4,6
13	420	12,0	225	6,6			4,20	4,7
14	400	12,0	220	6,3			4,40	4,5
15	400	11,8	235	6,3			3,95	4,6
16	400	11,0	250	6,1			3,70	4,4
17		>10,0	250				3,25	4,1
18		>8,4	270				2,30	3,4
19		>7,0	310				<1,70	3,0
20		>6,5	340					3,1
21		>6,0	340					1,9
22		<7,0	340					2,5
23		<7,7	305					2,5

Time: 150,0°E.

Sweep: 1,0 Mc to 16,0 Mc in 1 minute 55 seconds.

Table 61

Brisbane, Australia (27.5°S, 152.9°E)

December 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		9.0	290				3.7	2.60
01		0.5	290				2.4	2.55
02		0.4	290				2.5	2.45
03		8.0	300					2.40
04		7.6	300			E		2.45
05		7.9	200			1.9	2.0	2.50
06	---	8.4	250	---		2.8	3.6	2.60
07	(460)	9.2	240	5.2		3.4	4.4	2.55
08	(530)	10.0	230	5.5		3.0	5.3	2.50
09	(525)	10.1	(230)	6.0		>4.0	5.7	2.40
10	430	10.7	(220)	6.5		4.2	6.0	2.40
11	430	11.0	(230)	6.6		4.3	5.0	2.40
12	430	11.1	235	6.5		4.3	5.0	2.40
13	430	11.0	(240)	6.3		4.3	4.0	2.40
14	410	10.9	230	6.3		4.2	4.5	2.40
15	410	10.2	235	6.1		4.0	4.4	2.40
16	410	9.9	250	5.9		3.7	4.3	2.45
17	---	9.4	250	---		3.2	4.0	2.50
18		9.0	275			2.2	3.8	2.45
19		9.0	300			E	3.3	2.45
20		9.0	<330			---	2.6	2.40
21		9.1	330				3.4	2.40
22		9.5	320				3.4	2.45
23		9.6	305				3.4	2.50

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 63

Townsville, Australia (19.3°S, 146.7°E)

November 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		>7.0	280					
01		>7.0	280					
02		>7.0	<300					
03		>6.8	290				1.4	
04		>7.0	280				1.6	---
05		>7.0	300			---	2.2	---
06		>7.8	250			2.30		
07	---	(10.3)	240	---		3.00	3.5	---
08	---	10.9	230	---		3.50	4.4	2.75
09	---	11.7	230	---		3.75	4.4	2.65
10	---	12.0	(220)	---		4.00	4.7	2.50
11	(410)	13.0	(220)	6.6		4.10	4.7	2.60
12	410	13.0	220	6.6		4.15		2.55
13	400	13.0	230	6.7		(4.15)	4.2	2.50
14	390	12.9	230	6.7		4.10	4.7	2.50
15	400	12.0	240	6.4		3.85	4.5	2.50
16	---	>11.4	250	---		3.50	4.6	2.60
17		>10.0	(250)			3.00	4.2	---
18		>9.5	280			(2.10)	3.8	
19		>7.0	300			---	3.1	
20		---	320				2.8	
21		>7.0	330					
22		>7.0	310					
23		>7.0	290					

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 65

Hobart, Tasmania (42.9°S, 147.2°E)

November 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.5	310					2.40
01		6.0	320					2.40
02		5.5	330					2.35
03		5.0	330					2.30
04		4.6	330					2.40
05		5.4	300			<2.0		2.55
06	---	6.0	270	---		2.6		2.60
07	6	6.3	250	4.9		3.2		2.60
08	6	7.0	240	5.0		3.5		2.60
09	530	7.4	230	5.5		3.7		2.40
10	560	7.5	230	5.8		3.9		2.30
11	530	8.0	230	6.0		4.0		2.30
12	520	8.0	230	6.2		4.0		2.30
13	520	8.2	240	6.0		4.0		2.35
14	530	8.0	230	5.9		4.0		2.30
15	500	8.5	240	5.6		3.8		2.30
16	490	8.4	240	5.3		3.6		2.40
17	(460)	8.5	250	5.0		3.2		2.40
18		8.5	260			2.6		2.50
19		8.5	300			<2.0		2.55
20		8.5	300			---	3.3	2.50
21		8.0	300					2.50
22		7.5	330					2.45
23		7.3	320					2.45

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 62

Hobart, Tasmania (42.9°S, 147.2°E)

December 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.3	300					2.40
01		6.8	310					2.40
02		6.0	320					2.30
03		5.6	330				1.9	2.30
04		5.5	330				1.40	1.0
05	---	6.0	280	---		1.95	2.0	2.50
06	600	6.4	250	4.4		2.75	3.5	2.55
07	440	6.9	240	5.1		3.25	3.7	2.50
08	460	7.2	240	5.6		3.60	4.2	2.45
09	500	7.6	(240)	6.0		3.90	4.6	2.45
10	500	7.4	(240)	5.9		4.00	4.9	2.40
11	500	8.2	(220)	6.0		4.00	4.5	2.30
12	500	8.0	---	6.0		3.90	4.5	2.35
13	500	8.3	(240)	6.0		3.90	4.8	2.30
14	510	7.7	(230)	5.8		3.90	4.5	2.35
15	500	8.0	230	5.8		4.00		2.35
16	470	7.8	240	5.7		3.80		2.40
17	440	7.7	240	5.4		3.50	3.7	2.40
18	(400)	7.7	250	4.8		3.00	3.4	2.50
19		7.8	290			<2.20	3.7	2.50
20		7.8	300			<2.20	3.5	2.50
21		8.5	310			---	3.5	2.45
22		8.5	310				3.5	2.40
23		8.0	320					2.40

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 64

Brisbane, Australia (27.5°S, 152.9°E)

November 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		9.0	290				2.6	2.55
01		0.5	290				2.7	2.45
02		8.4	300				2.0	2.45
03		7.8	300				1.7	2.45
04		7.9	300			E		2.40
05		0.0	290			1.9		2.50
06	---	9.0	250	---		2.7	3.0	2.70
07	---	9.5	240	---		3.4	4.0	2.60
08	(500)	10.2	230	5.5		3.7	4.4	2.50
09	(410)	11.2	230	6.0		4.0	4.6	2.50
10	420	11.8	230	6.4		<4.1	5.0	2.45
11	420	11.9	230	6.6		4.3	4.9	2.45
12	400	12.0	230	6.5		4.3	4.6	2.40
13	400	12.0	230	6.5		4.2	4.5	2.45
14	410	11.0	240	6.2		4.0	4.4	2.45
15	410	10.5	240	6.0		3.9	4.1	2.45
16	---	10.0	250	5.0		3.5	4.3	2.50
17		9.6	260			2.9	3.7	2.50
18		10.0	280			1.8	3.6	2.55
19		9.6	290			E	2.1	2.50
20		9.5	310			---		2.45
21		9.9	320					2.45
22		9.8	320					2.45
23		9.6	300				3.0	2.50

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 66

Townsville, Australia (19.3°S, 146.7°E)

October 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		>9.0	260					
01		>8.4	245					---
02		>8.4	275					---
03		>7.4	280					---
04		>7.8	280					---
05		>7.5	280					---
06		>8.8	265			2.10		---
07		(11.5)	230			2.90	3.3	(3.10)
08		>12.4	230			3.25	3.8	(2.95)
09	---	13.0	220	---		3.65	4.6	2.95
10	---	13.6	(210)	---		3.85	5.0	2.80
11	---	13.9	220	---		(4.00)	5.0	2.75
12	(340)	14.0	210	---		4.10	5.6	2.70
13	(375)	13.8	210	---		4.05	4.6	2.70
14	---	13.5	230	---		3.90	4.6	2.65
15	---	13.0	(240)	---		3.70	4.3	2.65
16	---	>11.9	240			3.35	4.3	---
17	---	>10.4	250			2.80	(3.8)	---
18		>9.8	270			---	(3.1)	---
19		>9.5	(270)			---	(3.3)	---
20		>9.0	290				2.2	---
21		>9.0	290				(1.8)	---
22		>9.0	280					---
23		>9.5	270					---

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 67

Brisbane, Australia (27.5°S, 152.9°E)									October 1956	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2		
00		9.0	270					2.65		
01		8.5	265					2.65		
02		8.0	260					2.60		
03		7.9	280					2.55		
04		7.7	290			E		2.55		
05		8.4	300			E		2.65		
06		10.1	250			2.5		2.85		
07		11.4	240			3.0	3.3	2.90		
08		12.2	230			3.5	4.0	2.85		
09	(260)	12.5	220	4.8		3.8	4.0	2.75		
10	(260)	12.6	220	5.0		3.9	4.2	2.65		
11	300	12.9	210	5.5		4.0	4.2	2.60		
12	(355)	13.0	215	6.4		4.1		2.55		
13	350	12.5	230	6.3		4.0	4.2	2.55		
14	(360)	12.0	220	6.0		3.9	4.1	2.55		
15	---	11.9	230	---		3.7	4.0	2.55		
16	---	11.8	240	---		3.2	3.8	2.60		
17		11.0	<260			2.6	3.0	2.65		
18		10.6	260			E	(2.0)	2.70		
19		10.1	260			E	2.0	2.65		
20		9.8	280					2.60		
21		10.0	290					2.65		
22		10.0	280					2.65		
23		9.7	270					2.70		

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 60

Hobart, Tasmania (42.9°S, 147.2°E)									October 1956	
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2		
00		7.0	300					2.50		
01		6.4	295					2.50		
02		6.0	280					2.50		
03		5.5	290					2.50		
04		5.3	290					2.50		
05		5.4	300				1.5	2.60		
06		6.8	250				<2.0	2.80		
07		8.3	240				2.8	2.95		
08	---	9.4	230				3.2	2.90		
09	---	10.1	230	---			3.5	2.80		
10	---	10.7	220	---			3.6	2.70		
11	(500)	11.0	220	5.6			3.7	2.65		
12	(500)	11.0	205	5.9			3.8	2.60		
13	(500)	11.3	210	5.8			3.8	2.60		
14	(500)	11.3	230	5.5			3.7	2.60		
15	---	11.0	230	---			3.5	2.60		
16	---	10.5	230	---			3.3	2.65		
17		10.5	240				2.7	2.70		
18		10.5	250				<2.0	2.75		
19		10.2	250				<2.0	2.70		
20		9.3	270					2.65		
21		8.1	280					2.60		
22		7.6	290					2.55		
23		7.3	300					2.50		

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 69

Poitiers, France (46.6°N, 0.3°E)									July 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2		
00	295	(6.8)					2.4	----		
01	295	6.9					2.3	(2.55)		
02	290	6.5					2.4	----		
03	285	5.9					2.4	(2.70)		
04	290	5.4	---	---	---	E	2.7	2.70		
05	275	5.9	255	3.3		1.6	2.7	2.85		
06	300	6.4	240	4.2	110	2.7	3.1	2.95		
07	320	6.6	225	4.7	105	3.1	3.8	(2.95)		
08	340	7.0	225	5.1	100	3.4	4.2	2.85		
09	350	7.2	220	5.2	100	3.6	4.3	2.80		
10	345	7.6	210	5.4	100	3.7	4.6	2.95		
11	355	7.4	220	5.4	100	3.7	4.5	(2.90)		
12	360	7.5	225	5.6	100	3.8	4.5	2.85		
13	380	7.5	215	5.5	100	3.8	4.4	2.80		
14	370	7.5	225	5.3	100	3.7	4.2	2.80		
15	350	7.4	225	5.4	100	3.6	3.9	2.90		
16	350	7.5	235	5.2	100	3.4	4.0	2.85		
17	320	7.8	230	4.8	105	3.1	3.6	----		
18	300	8.0	250	4.2	110	2.7	3.3			
19	270	(8.0)	255	3.5	---	1.9	3.2			
20	250	(7.0)	---	---	---	E	3.5			
21	260	(7.0)	---	---	---		3.3	----		
22	280	7.2					3.6	----		
23	285	6.9					2.6	----		

Time: 0.0°.

Sweep: 1.6 Mc to 16.8 Mc in 1 minute.

Table 70

Casablanca, Morocco (33.6°N, 7.6°W)									July 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2		
00	<320	8.55					3.6	2.55		
01	<310	8.50					3.4	(2.55)		
02	<295	8.40					3.0	2.60		
03	<290	7.80			---	---	2.8	2.75		
04	<280	7.30			---	---	2.9	2.70		
05	<275	6.60			---	---	2.9	2.70		
06	255	6.60	265	---	---	1.90	3.2	2.80		
07	260	7.40	240	---	115	2.70	3.7	3.00		
08	300	7.60	230	(4.80)	110	3.10	4.5	3.00		
09	300	8.00	230	(5.20)	110	3.50	5.0	2.90		
10	350	8.10	220	(5.40)	110	(3.70)	4.9	2.80		
11	365	8.70	215	5.50	110	3.80	4.8	2.70		
12	365	9.00	220	5.50	110	3.90	4.8	2.70		
13	370	9.40	220	5.65	110	---	4.2	2.70		
14	350	9.75	220	5.60	110	(3.75)		2.70		
15	360	>9.50	230	5.35	110	3.70		2.70		
16	350	9.55	240	5.40	110	3.60	4.6	2.80		
17	345	9.60	240	(5.00)	110	3.30	4.5	2.80		
18	315	10.00	250	(4.50)	115	2.80	4.8	2.90		
19	<280	(9.10)	260	---	---	1.90	3.9	(2.80)		
20	<265	>8.50			---	---	3.5			
21	<295	>8.35			---	---	3.4	(2.50)		
22	<300	8.75					3.4	2.55		
23	<320	8.65					3.6	2.55		

Time: 0.0°.

Sweep: 1.6 Mc to 16.0 Mc in 1 minute 15 seconds.

Table 71

Poitiers, France (46.6°N, 0.3°E)								June 1956
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.9					2.3	----
01	300	6.8					2.0	(2.60)
02	290	6.6					2.3	----
03	295	6.3					2.2	2.60
04	310	6.0	305	2.5	---	E	2.8	2.65
05	315	6.4	260	3.6	<120	2.2	2.7	2.75
06	310	6.8	240	4.3	105	2.7	3.5	2.90
07	320	7.4	230	4.8	100	3.1	3.7	2.85
08	335	7.4	220	5.1	100	3.4	4.2	2.75
09	340	7.6	220	5.2	100	3.6	4.5	(2.90)
10	360	7.8	210	5.4	100	3.7	4.7	2.75
11	350	8.0	220	5.5	100	3.7	4.5	2.80
12	360	7.9	220	5.5	100	3.8	4.4	2.70
13	360	7.6	220	5.5	100	3.7	4.1	2.80
14	355	7.6	225	5.4	100	3.6	4.2	2.80
15	355	7.9	230	5.2	100	3.6	4.2	2.80
16	350	7.4	235	5.0	100	3.4	4.0	2.80
17	320	8.0	230	4.8	105	3.1	3.8	2.80
18	300	7.9	245	4.2	110	2.6	3.6	
19	270	(7.6)	260	3.3	130	2.0	3.4	
20	260	7.0	---	1.7	---	E	3.7	----
21	255	(6.9)			---	---	3.2	
22	280	(7.2)					2.7	
23	300	7.0					2.6	----

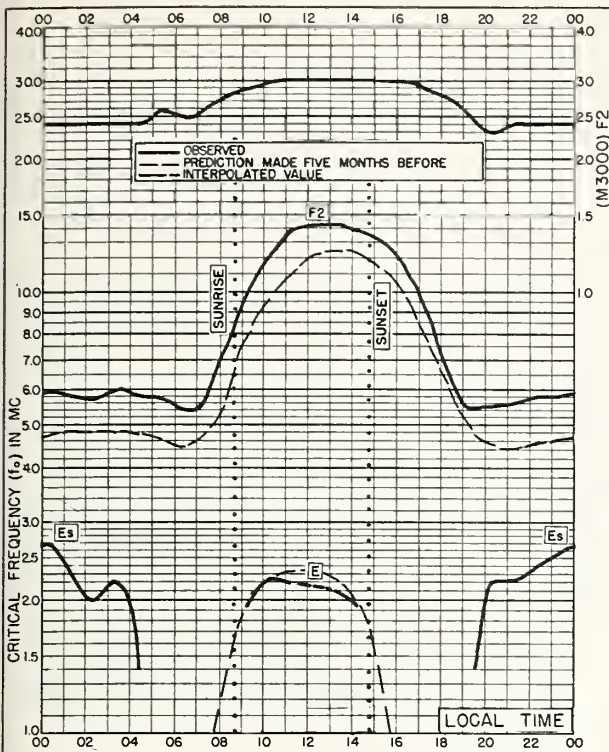


Fig. 1. LYCKSELE, SWEDEN
64.6°N, 18.8°E NOVEMBER 1957

NBS 503

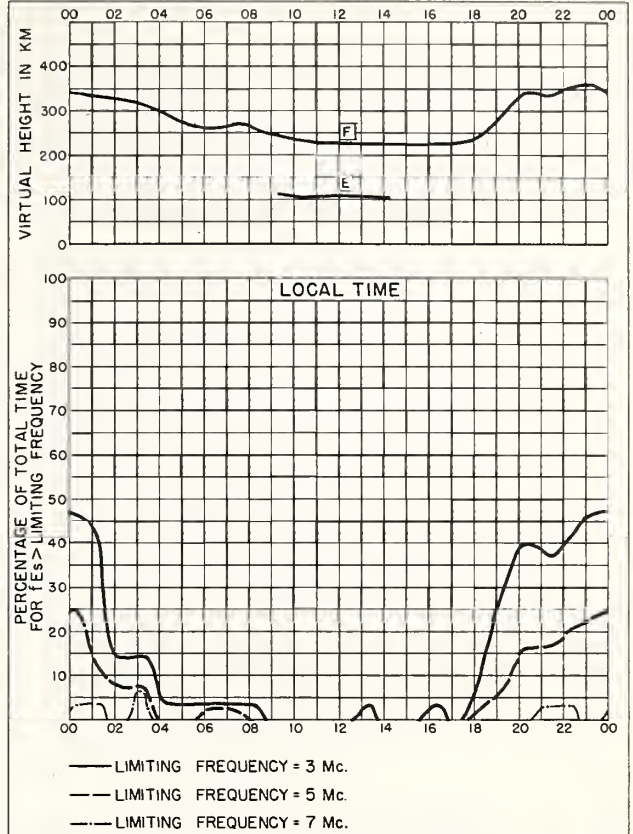


Fig. 2. LYCKSELE, SWEDEN NOVEMBER 1957

Commerce-Baird-Harley, Cdn.

NBS 490

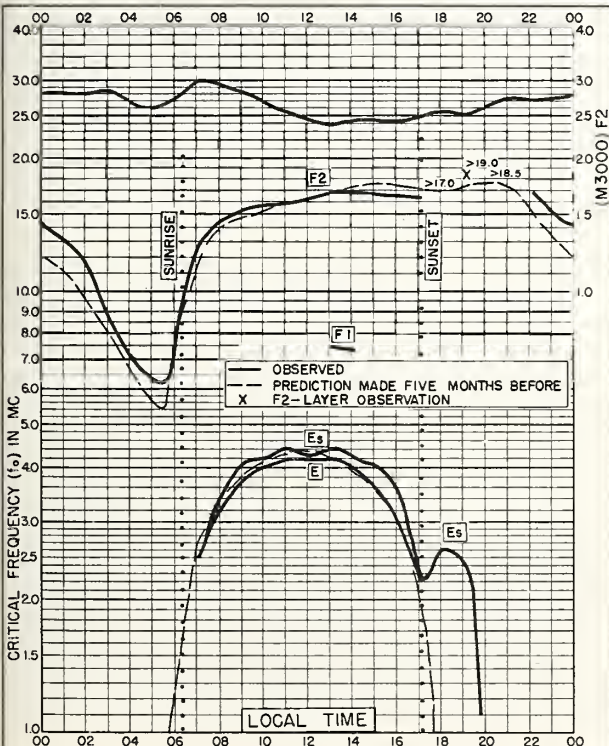


Fig. 3. FORMOSA, CHINA
25.0°N, 121.5°E NOVEMBER 1957

NBS 503

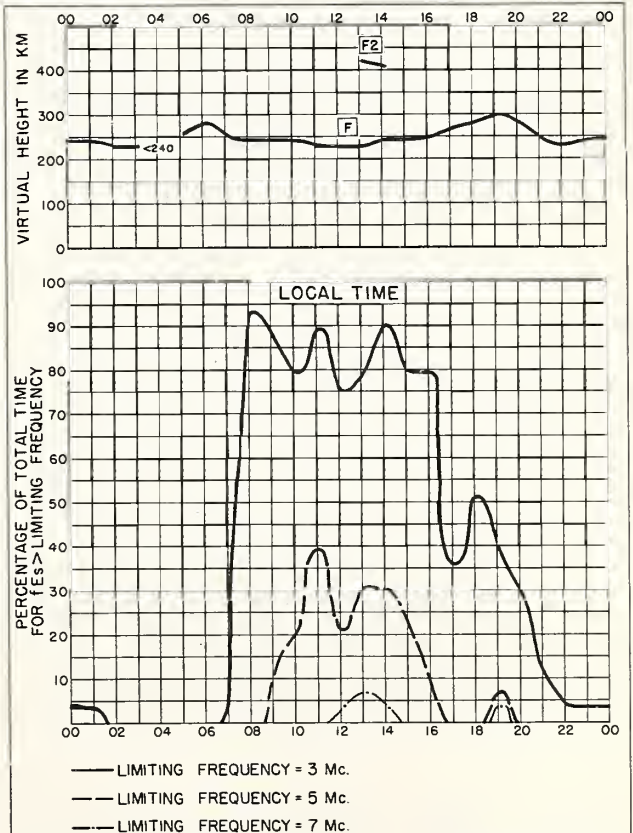


Fig. 4. FORMOSA, CHINA NOVEMBER 1957

Commerce-Baird-Harley, Cdn.

NBS 490

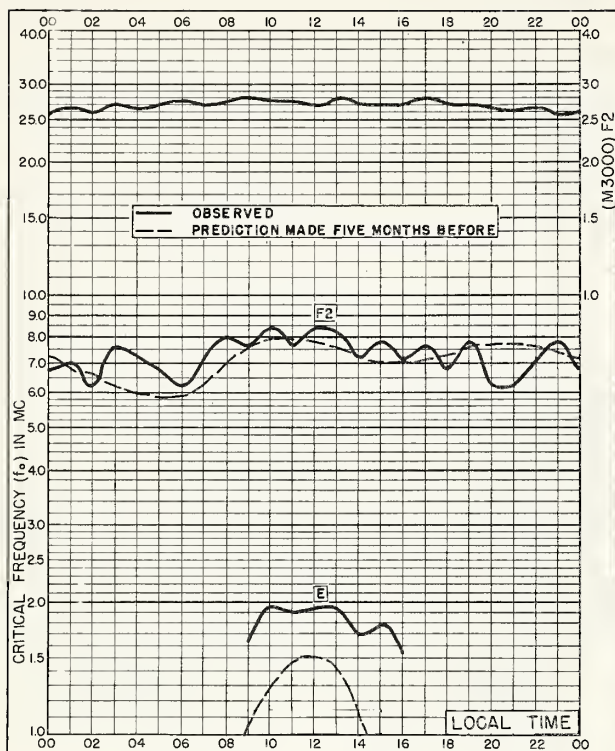


Fig. 5. FLETCHERS ICE I.
82.0°N, 101.0°W
OCTOBER 1957

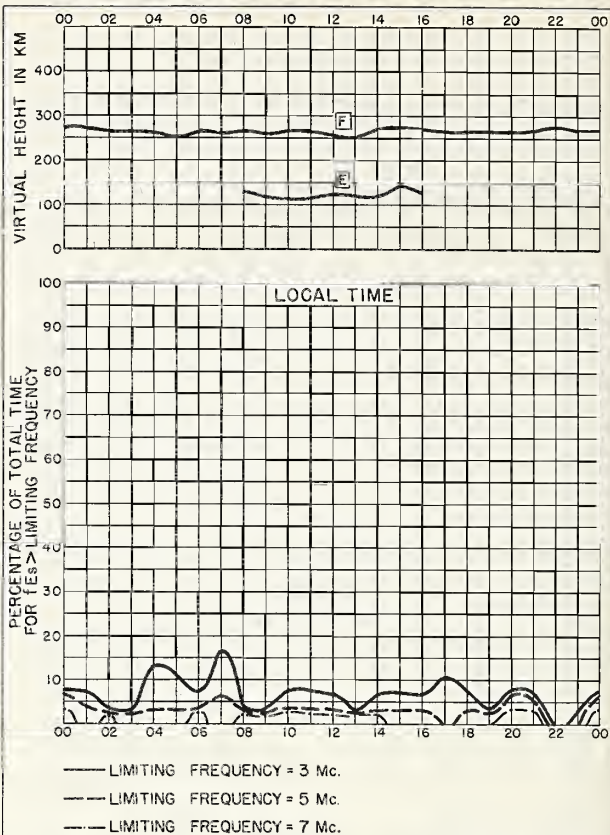


Fig. 6. FLETCHERS ICE I.
OCTOBER 1957

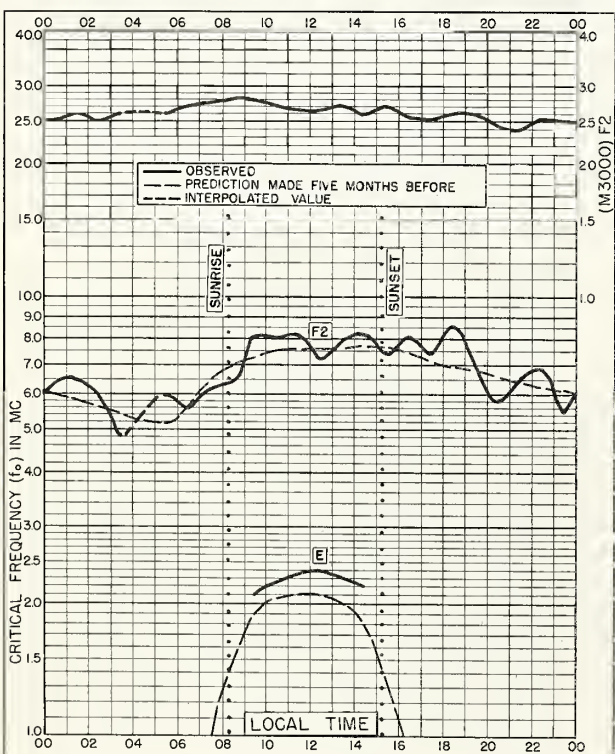


Fig. 7. THULE, GREENLAND
76.6°N, 68.7°W
OCTOBER 1957

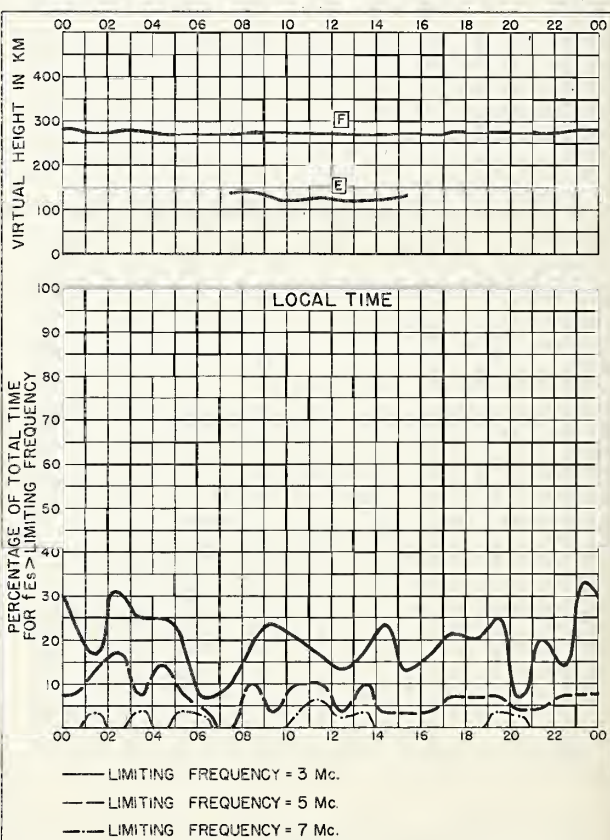


Fig. 8. THULE, GREENLAND
OCTOBER 1957

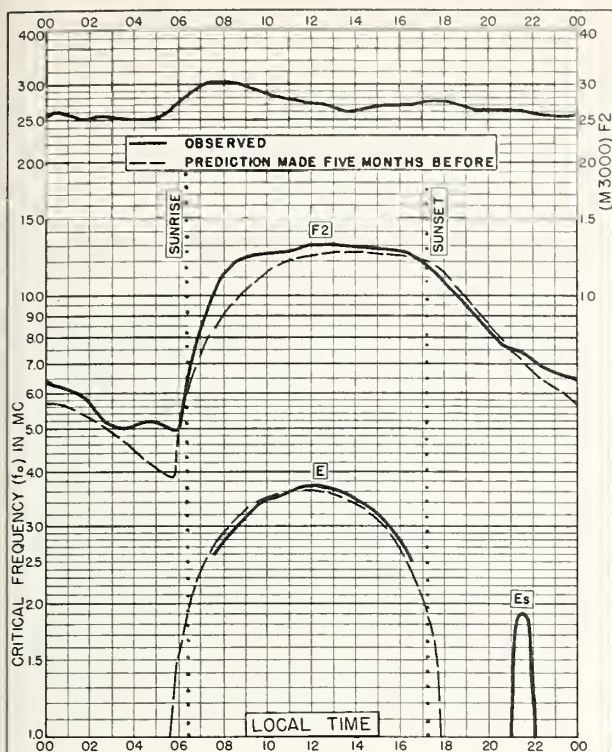


Fig. 9. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W
OCTOBER 1957

Commercial-Standard-Builders, Co.,

NBS 503

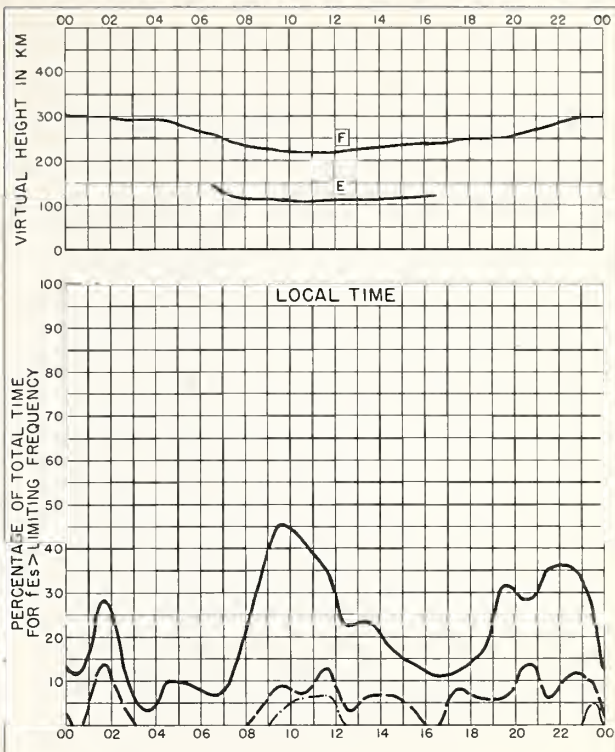


Fig. 10. ST. JOHN'S, NEWFOUNDLAND
OCTOBER 1957

Commercial-Standard-Builders, Co.,

NBS 490

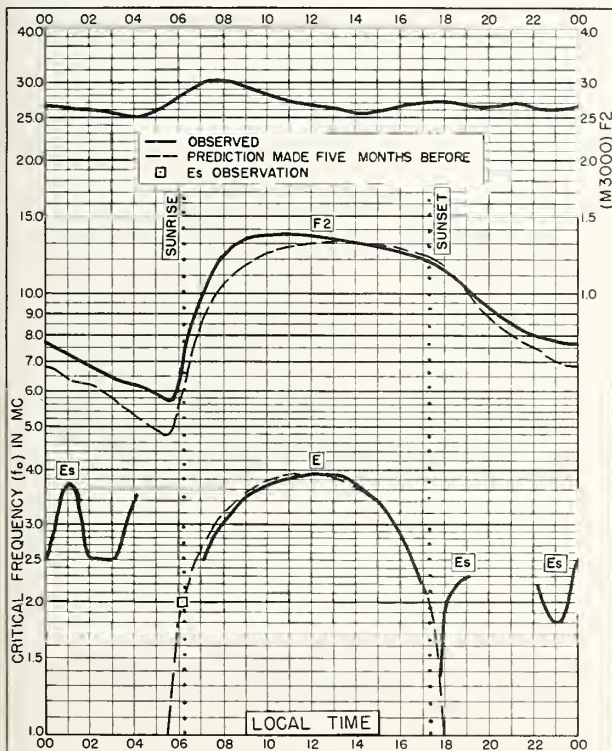


Fig. 11. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W
OCTOBER 1957

Commercial-Standard-Builders, Co.,

NBS 503

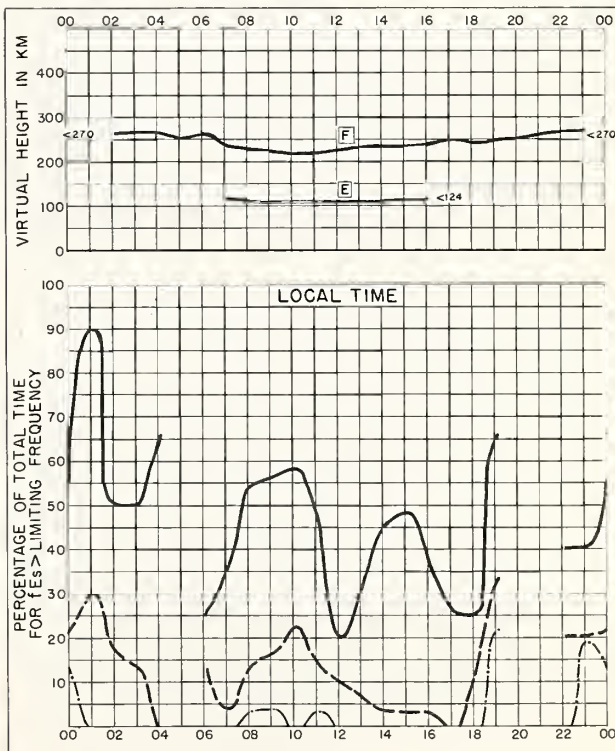


Fig. 12. FT. MONMOUTH, NEW JERSEY
OCTOBER 1957

Commercial-Standard-Builders, Co.,

NBS 490

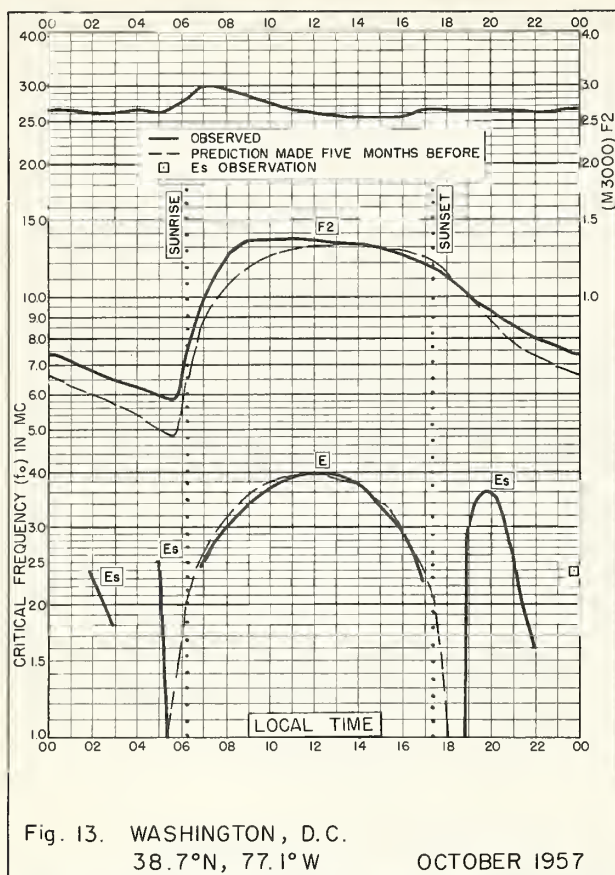


Fig. 13. WASHINGTON, D.C.
38.7°N, 77.1°W

OCTOBER 1957

NBS 503

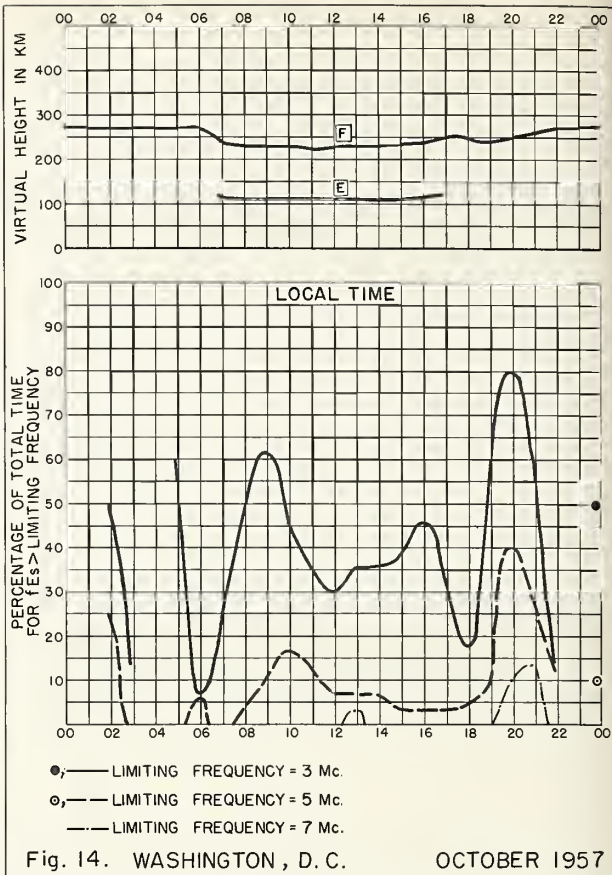


Fig. 14. WASHINGTON, D.C.

OCTOBER 1957

NBS 490

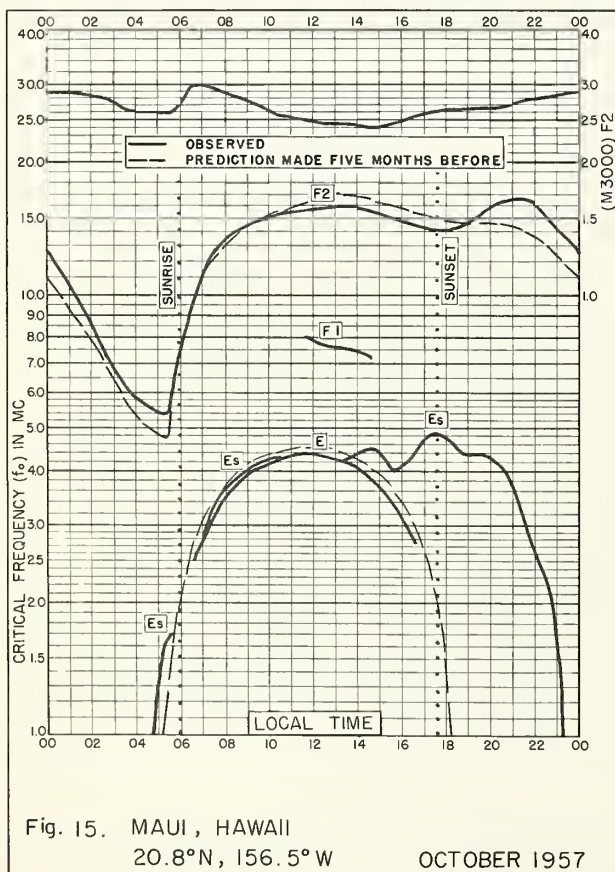


Fig. 15. MAUI, HAWAII
20.8°N, 156.5°W

OCTOBER 1957

NBS 503

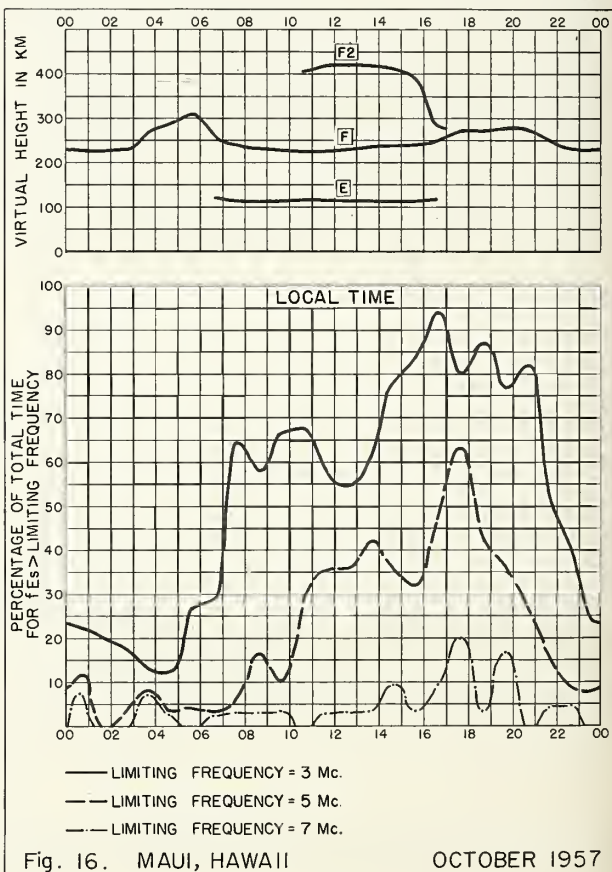


Fig. 16. MAUI, HAWAII

OCTOBER 1957

NBS 490

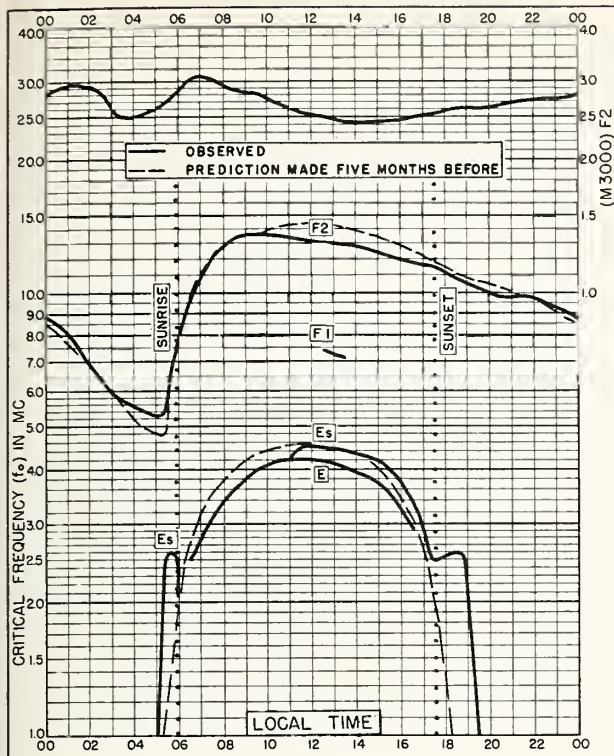


Fig. 17. PUERTO RICO, W.I.
18.5°N, 67.2°W

OCTOBER 1957

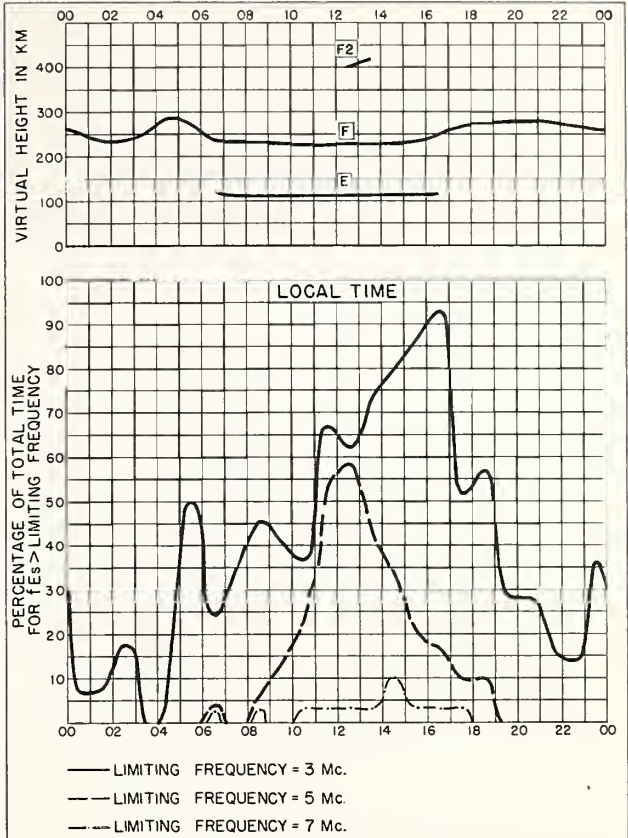


Fig. 18. PUERTO RICO, W.I.

OCTOBER 1957

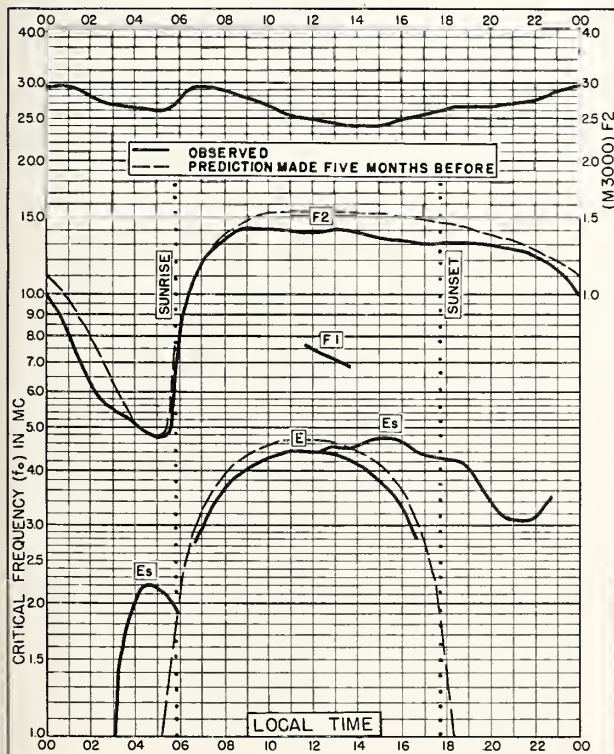


Fig. 19. PANAMA CANAL ZONE
9.4°N, 79.9°W

OCTOBER 1957

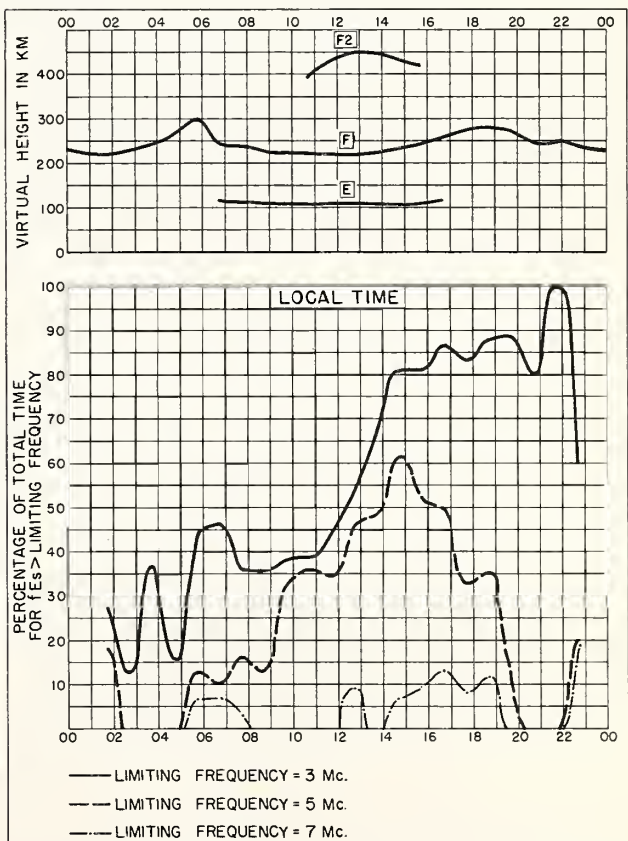


Fig. 20. PANAMA CANAL ZONE OCTOBER 1957

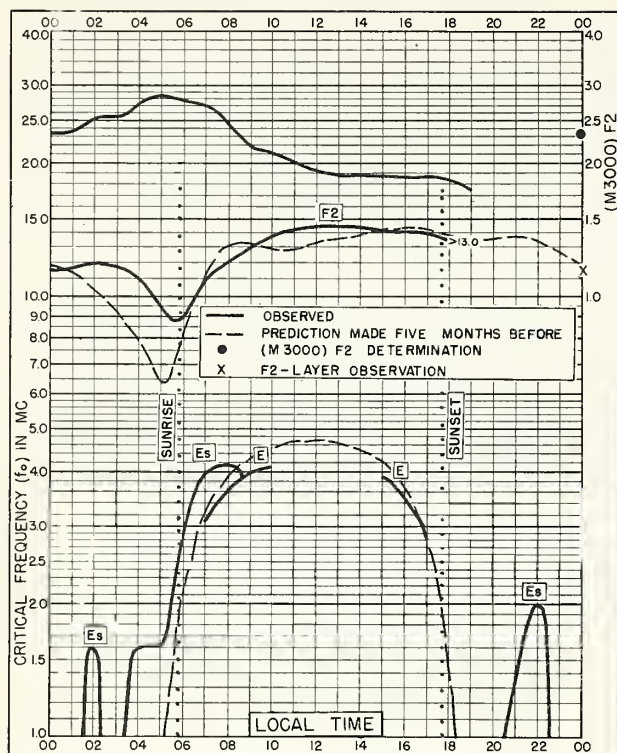


Fig. 21. BUNIA, BELGIAN CONGO

1.5°N, 30.2°E

OCTOBER 1957

NBS 503

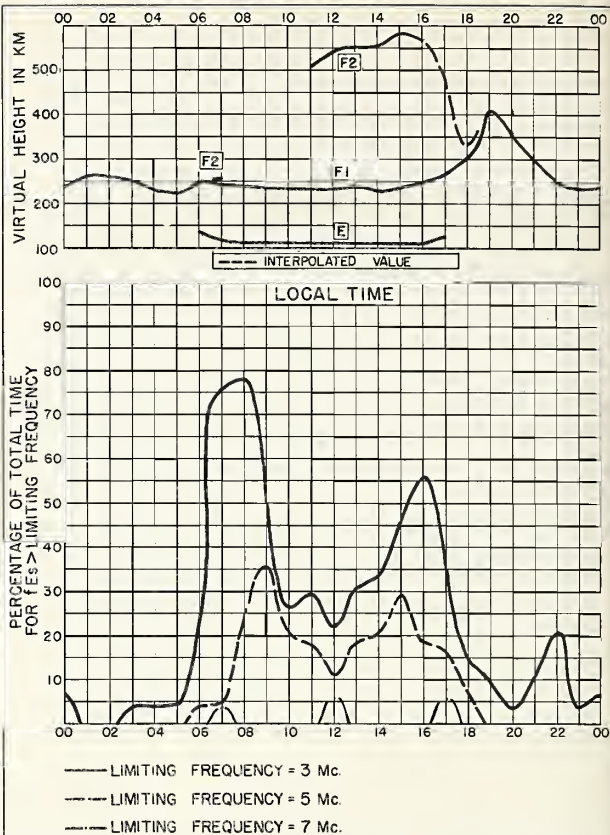


Fig. 22. BUNIA, BELGIAN CONGO

OCTOBER 1957

NBS 490

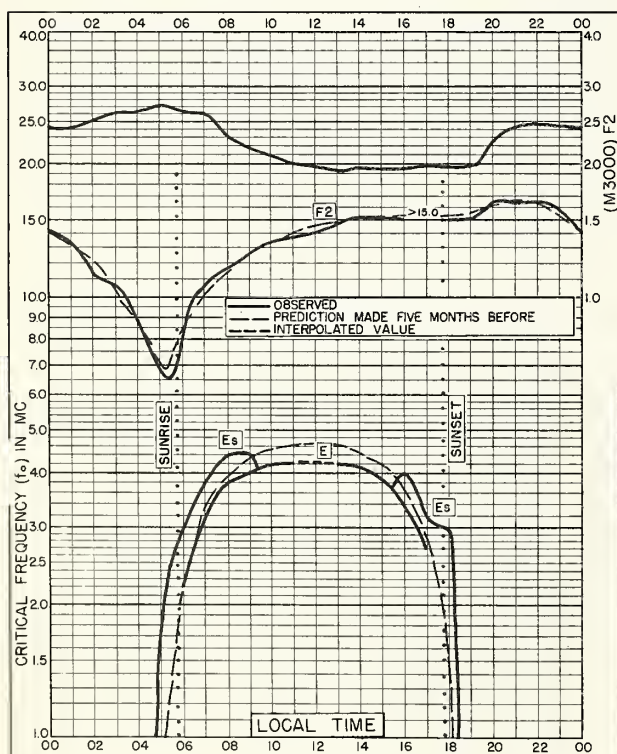


Fig. 23. LEOPOLDVILLE, BELGIAN CONGO

4.4°S, 15.2°E

OCTOBER 1957

NBS 503

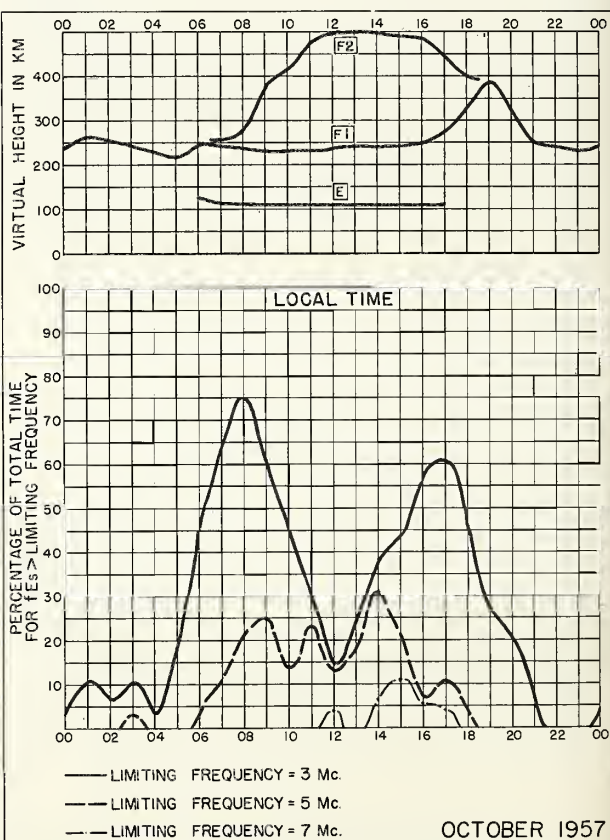


Fig. 24. LEOPOLDVILLE, BELGIAN CONGO

OCTOBER 1957

NBS 490

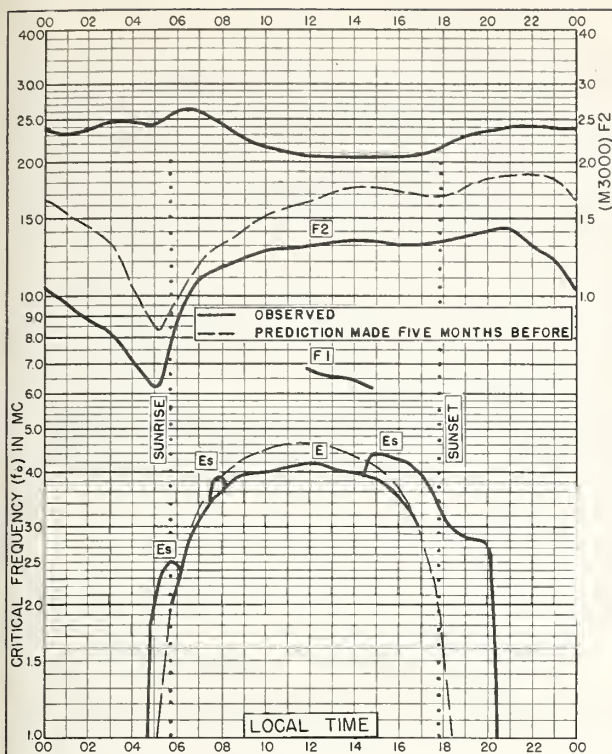


Fig. 25. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E OCTOBER 1957

NBS 503

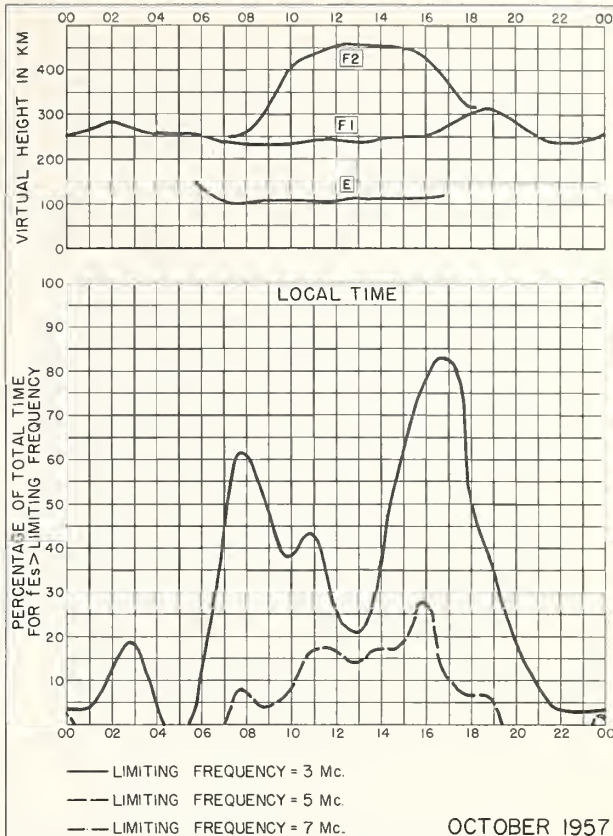


Fig. 26. ELISABETHVILLE, BELGIAN CONGO
OCTOBER 1957

Commerce-Standard-Boulder, Colo.

NBS 490

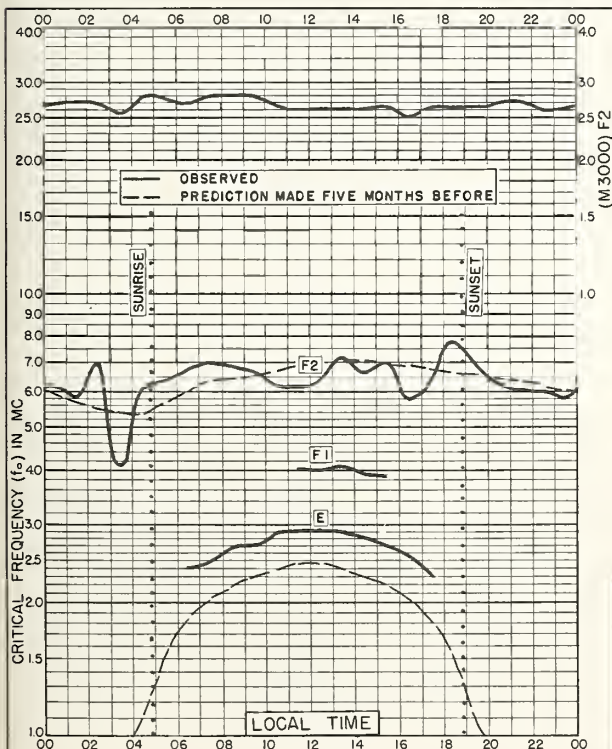


Fig. 27. THULE, GREENLAND
76.6°N, 68.7°W SEPTEMBER 1957

NBS 503

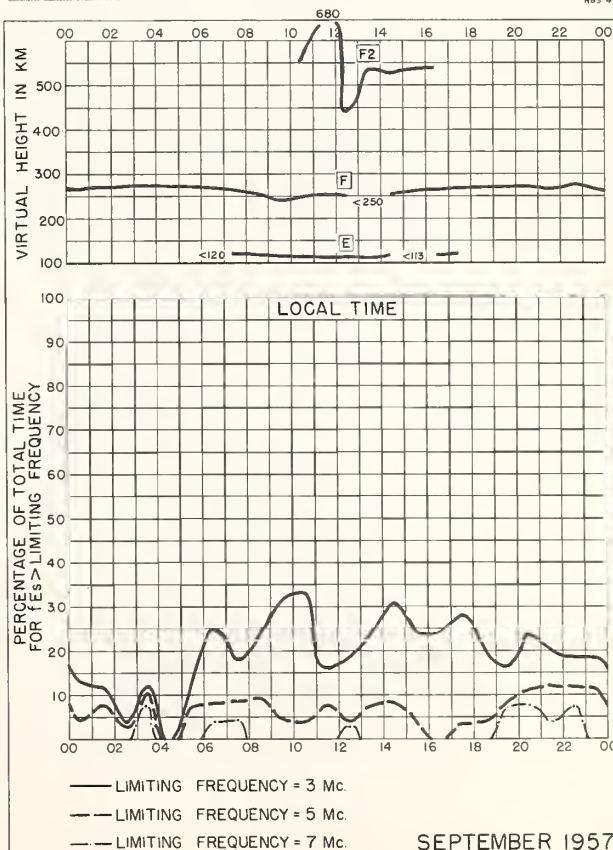


Fig. 28. THULE, GREENLAND
SEPTEMBER 1957

Commerce-Standard-Boulder, Colo.

NBS 490

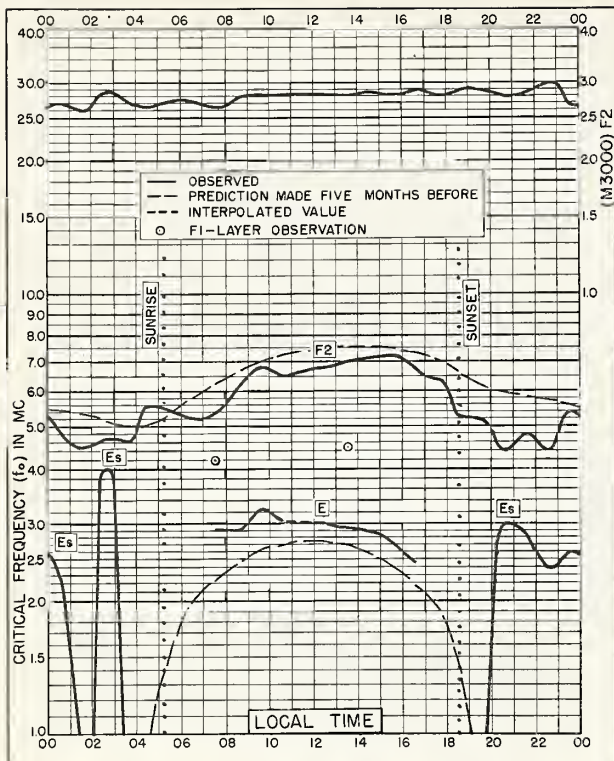


Fig. 29. POINT BARROW, ALASKA
71.3°N, 156.8°W SEPTEMBER 1957

NBS 503

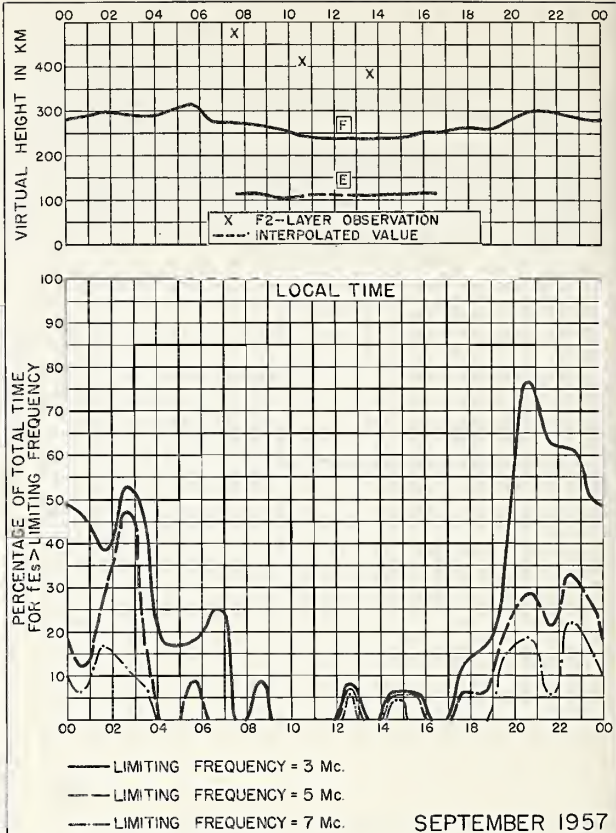


Fig. 30. POINT BARROW, ALASKA

SEPTEMBER 1957

NBS 490

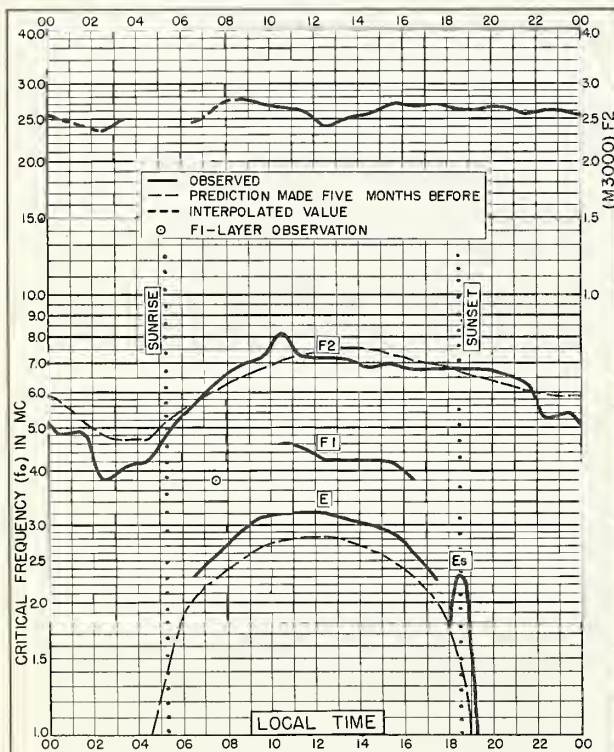


Fig. 31. GODHAVN, GREENLAND
69.2°N, 53.5°W SEPTEMBER 1957

NBS 503

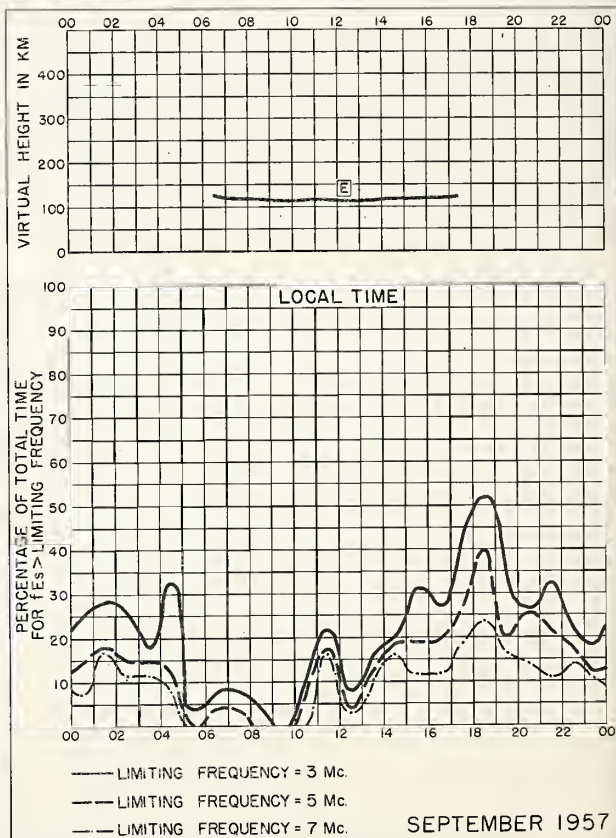


Fig. 32. GODHAVN, GREENLAND

SEPTEMBER 1957

NBS 490

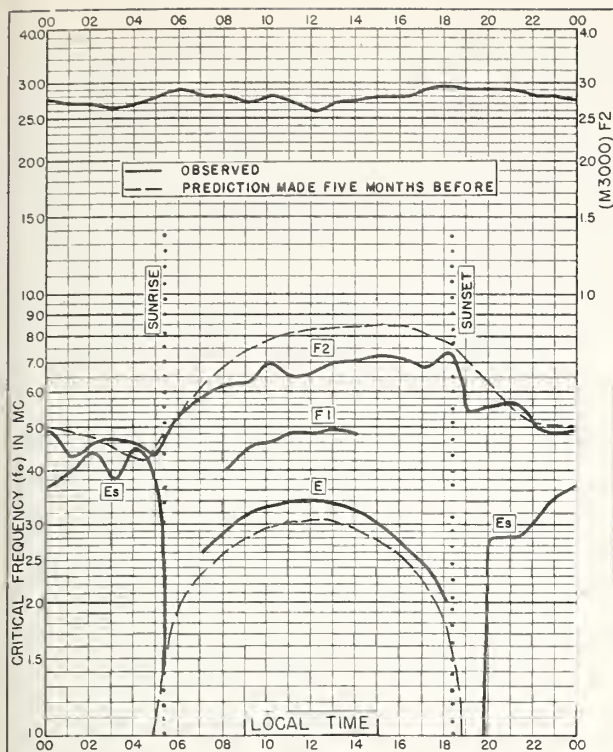


Fig. 33. FAIRBANKS, ALASKA
64.9°N, 147.8°W SEPTEMBER 1957

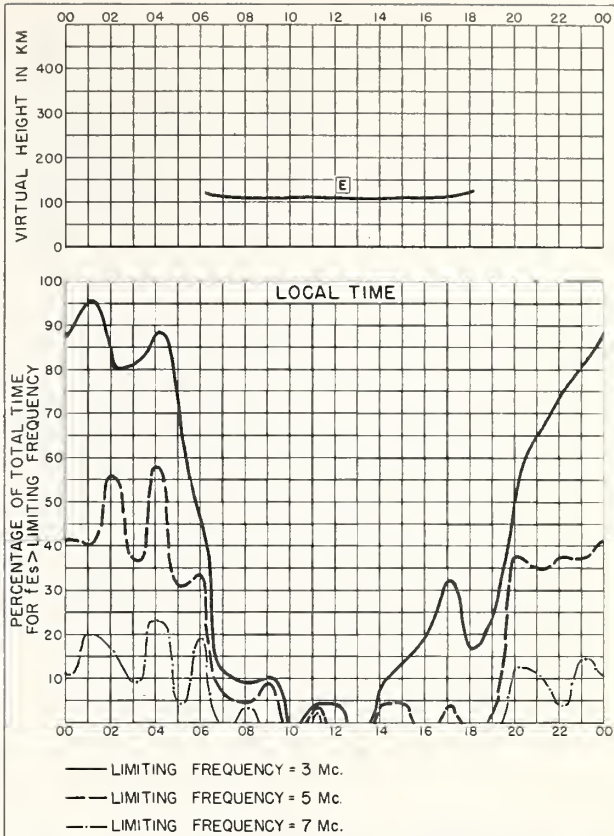


Fig. 34. FAIRBANKS, ALASKA SEPTEMBER 1957

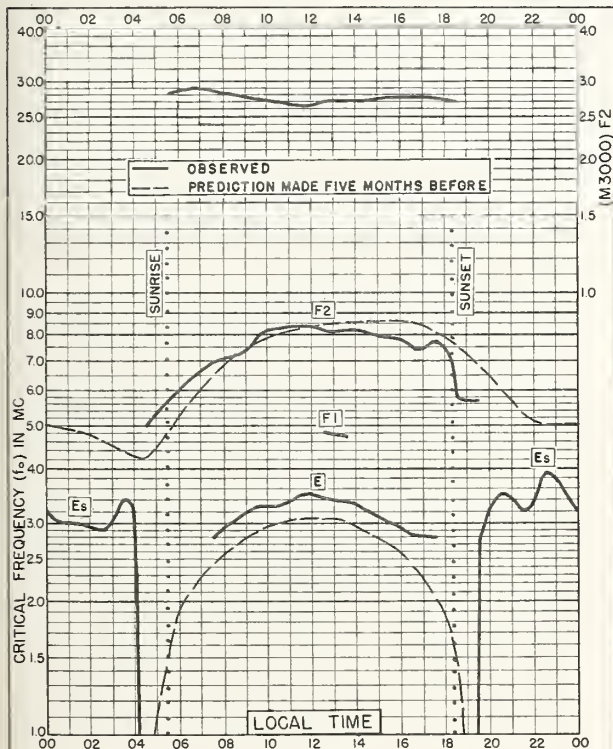


Fig. 35. REYKJAVIK, ICELAND
64.1°N, 21.8°W SEPTEMBER 1957

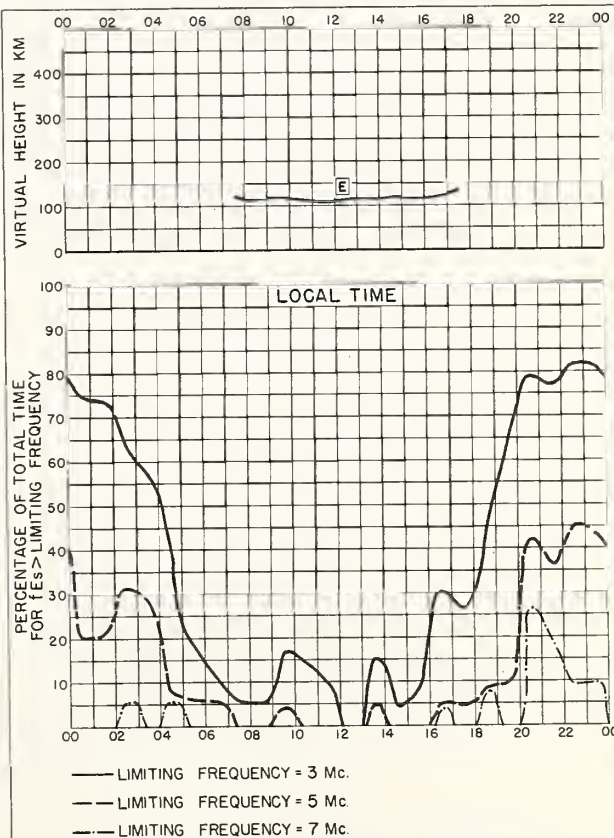


Fig. 36. REYKJAVIK, ICELAND SEPTEMBER 1957

NBS 503

Cushman-Baughman-Bridger, Cuba.

NBS 430

NBS 503

Cushman-Baughman-Bridger, Cuba.

NBS 430

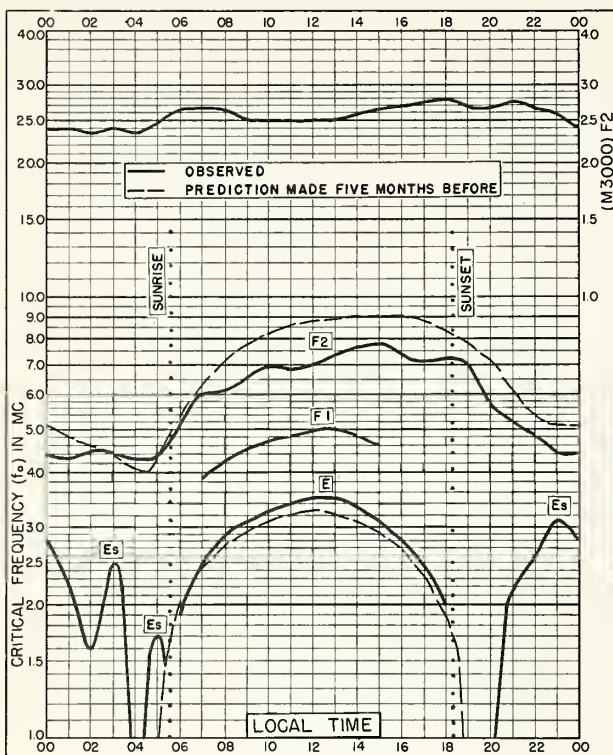


Fig. 37. ANCHORAGE, ALASKA
61.2°N, 149.9°W SEPTEMBER 1957

NBS 503

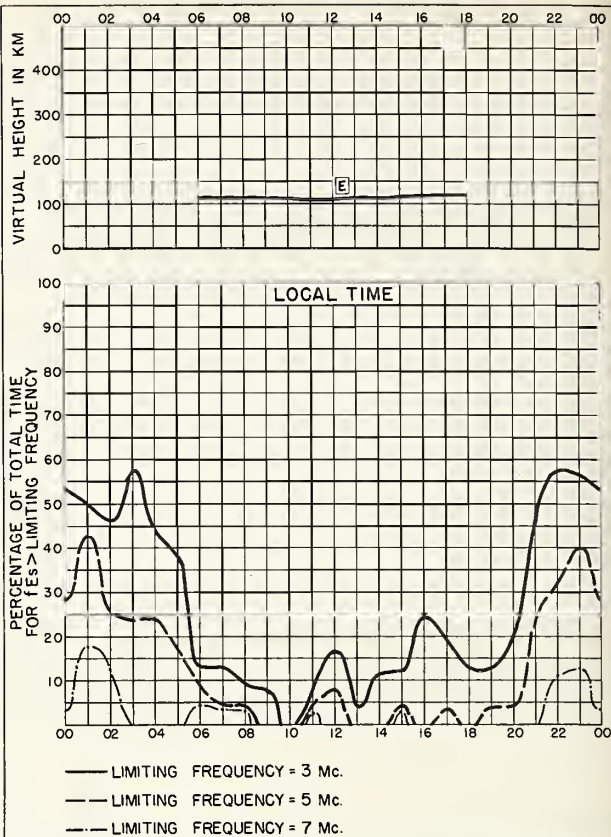


Fig. 38. ANCHORAGE, ALASKA SEPTEMBER 1957

Comstock-Standard-Indones, Calif.

NBS 490

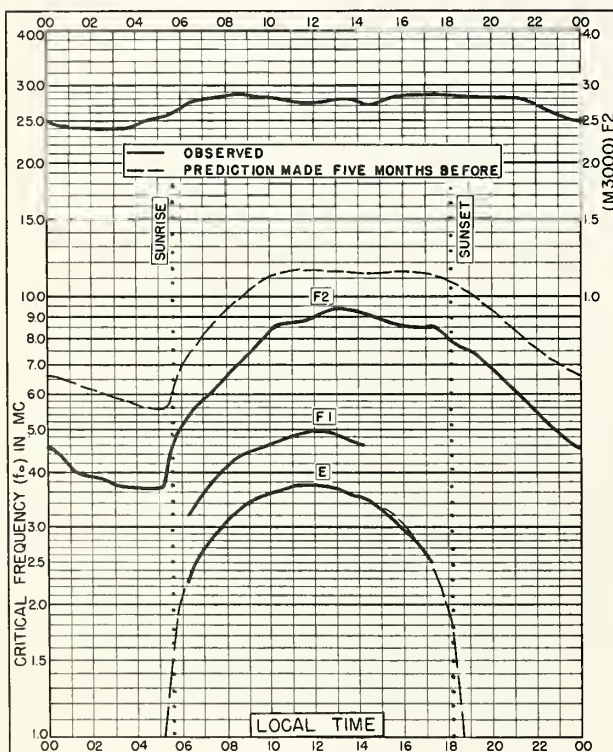


Fig. 39. ADAM, ALASKA
51.9°N, 176.6°W SEPTEMBER 1957

NBS 503

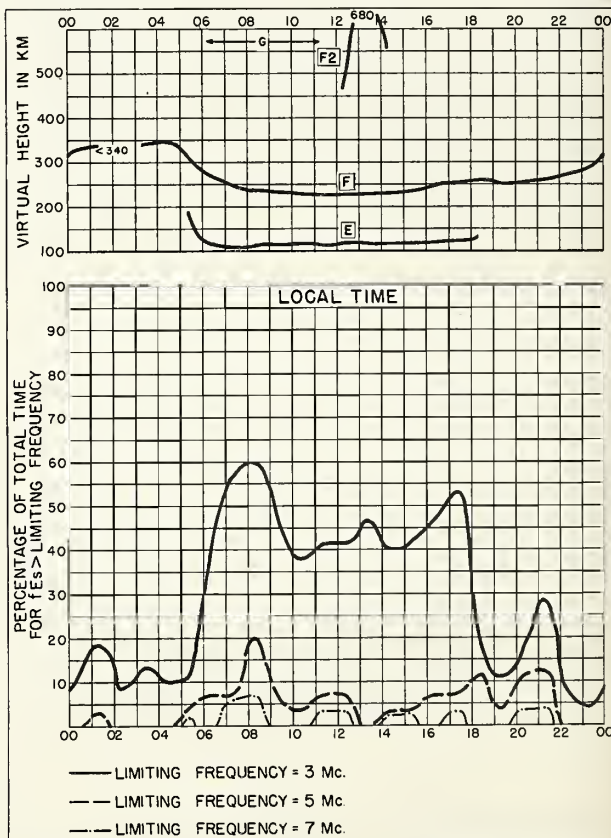


Fig. 40. ADAM, ALASKA SEPTEMBER 1957

Comstock-Standard-Indones, Calif.

NBS 490

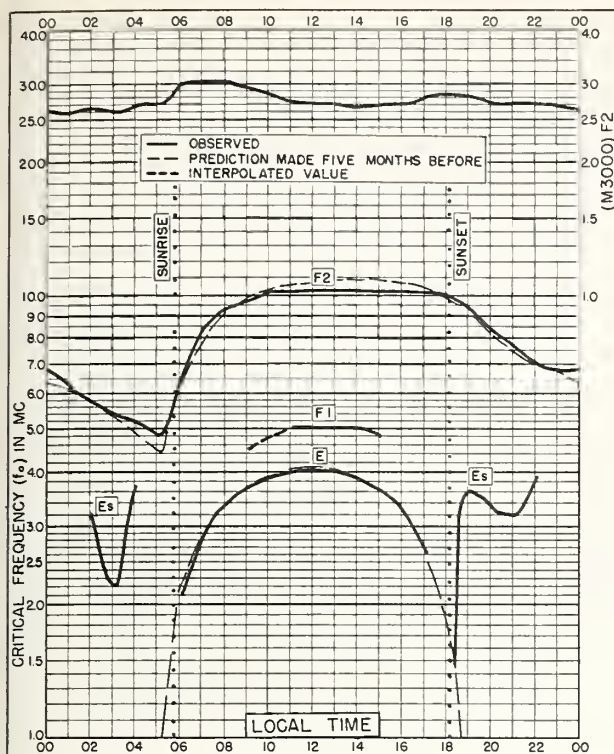


Fig. 41. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W SEPTEMBER 1957

NBS 503

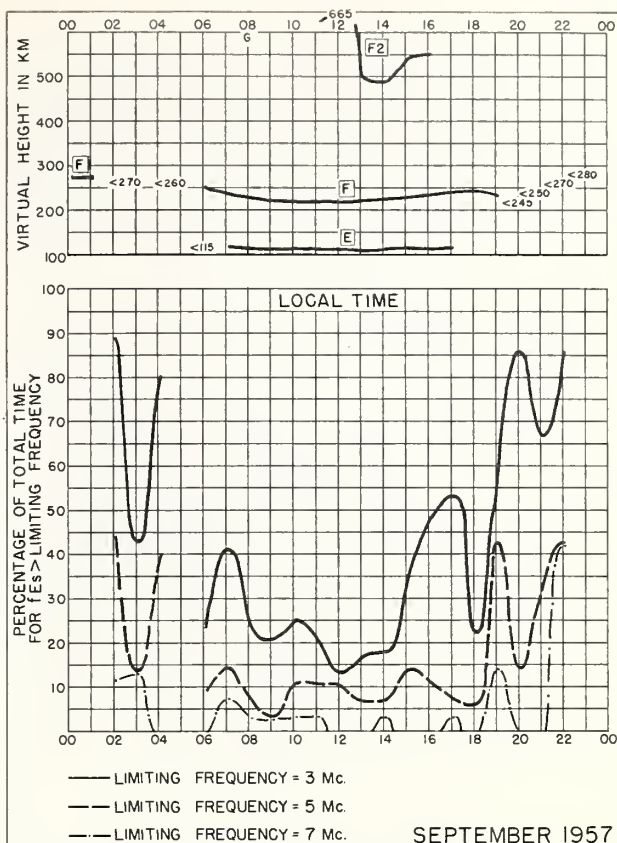


Fig. 42. FT. MONMOUTH, NEW JERSEY

NBS 490

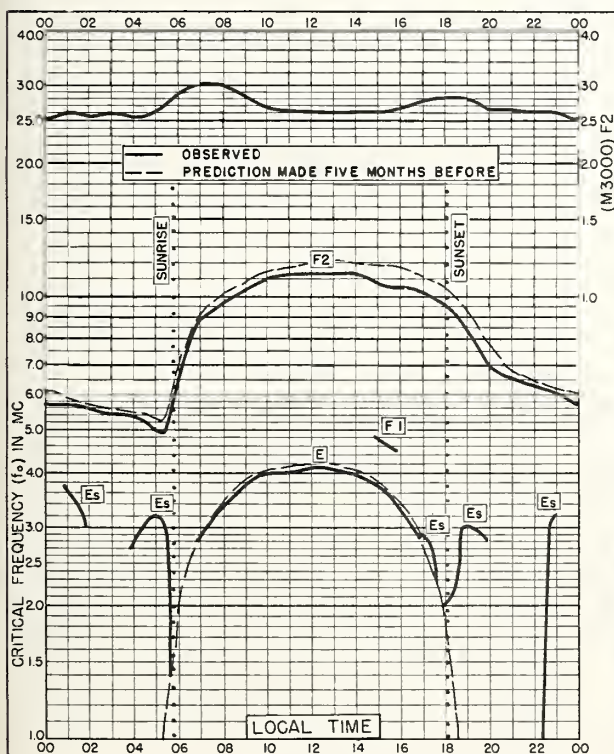


Fig. 43. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W SEPTEMBER 1957

NBS 503

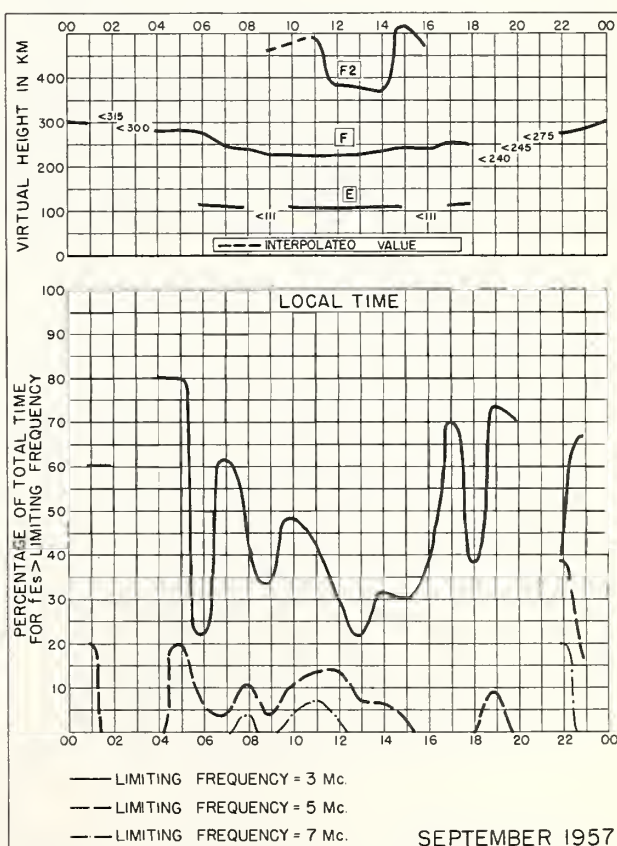


Fig. 44. WHITE SANDS, NEW MEXICO

NBS 490

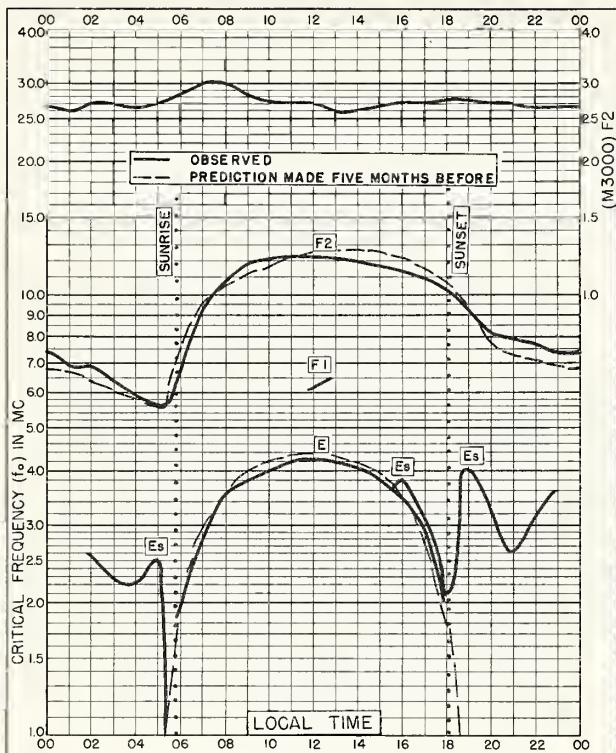


Fig. 45. GRAND BAHAMA I.
26.6°N, 78.2°W SEPTEMBER 1957

Compass Standard-Boulder, Colo.

NBS 503

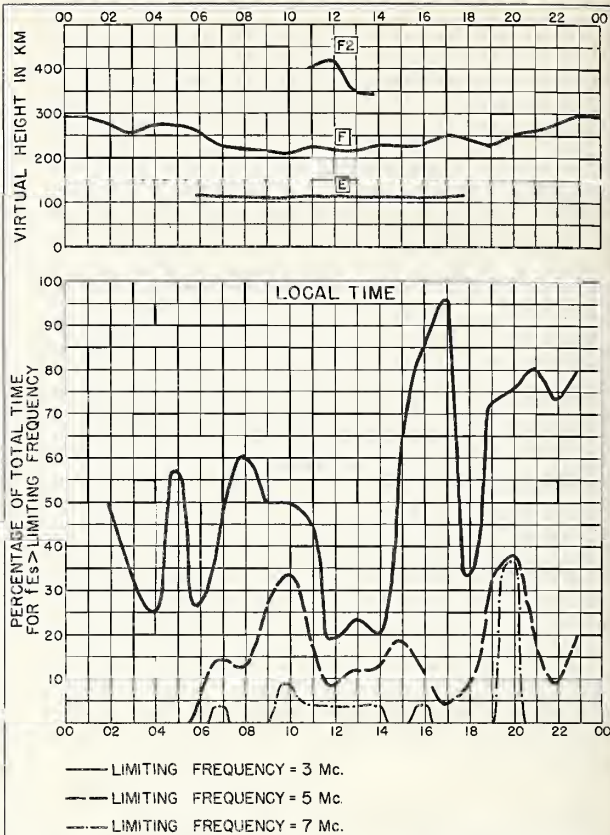


Fig. 46. GRAND BAHAMA I. SEPTEMBER 1957

Compass Standard-Boulder, Colo.

NBS 490

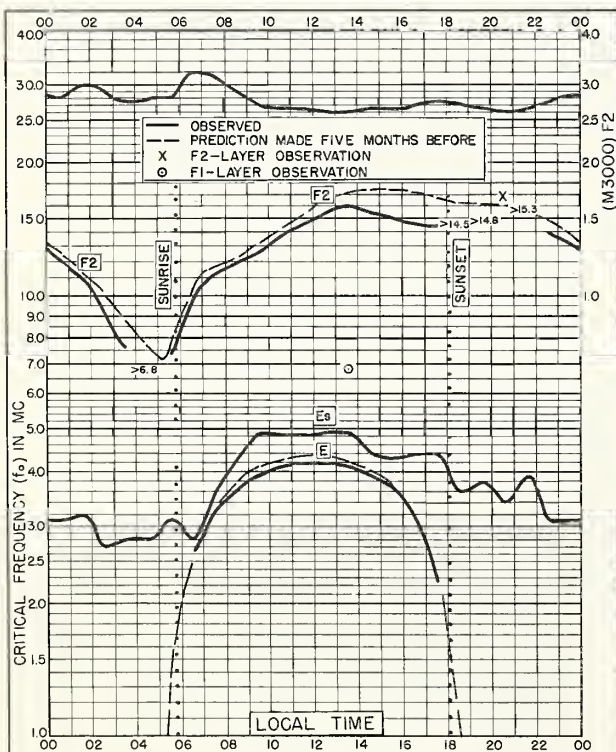


Fig. 47. OKINAWA I.
26.3°N, 127.8°E SEPTEMBER 1957

NBS 503

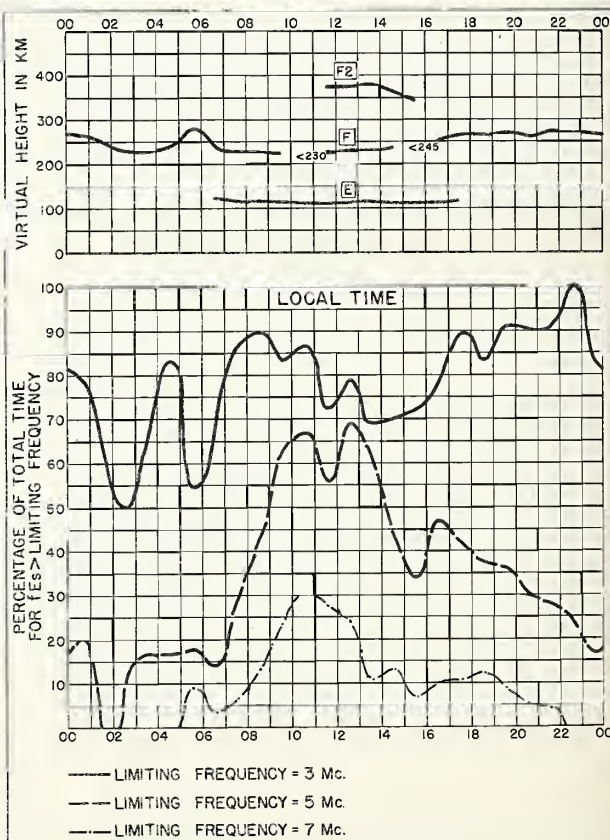


Fig. 48. OKINAWA I. SEPTEMBER 1957

Compass Standard-Boulder, Colo.

NBS 490

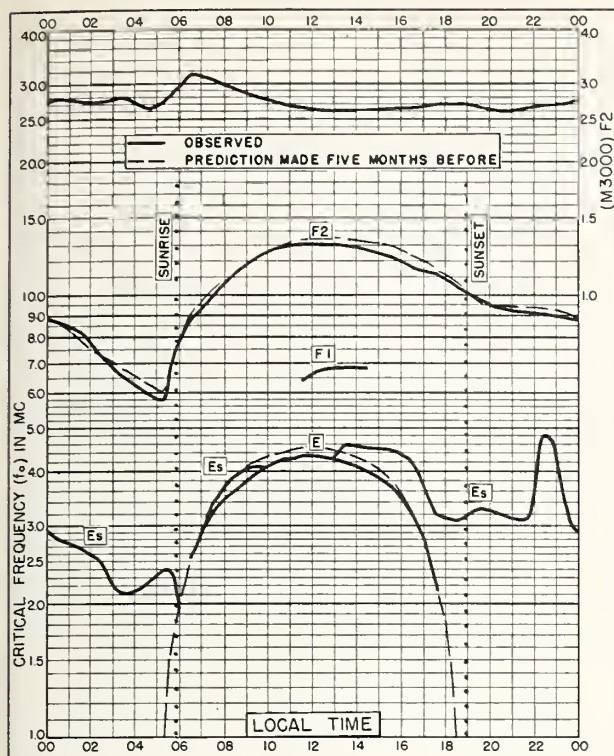


Fig. 49. PUERTO RICO, W.I.
18.5°N, 67.2°W SEPTEMBER 1957

NBS 503

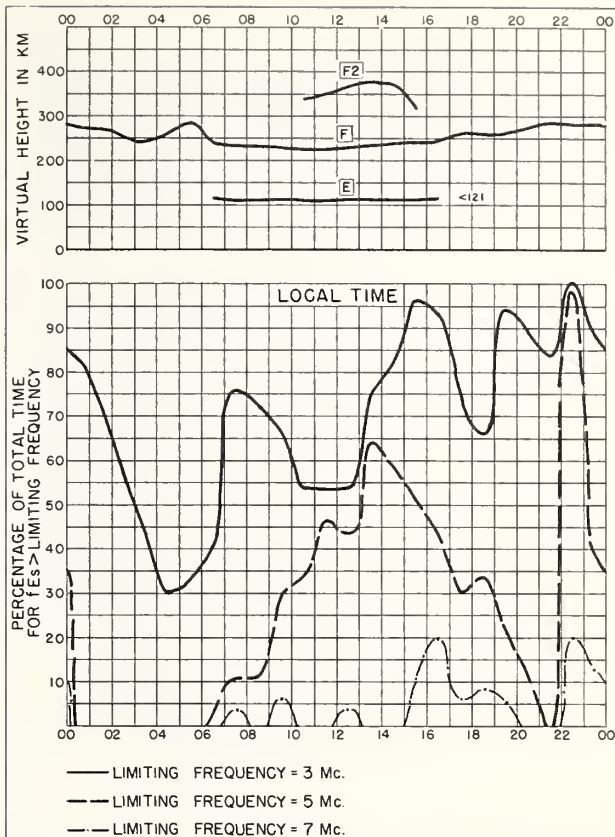


Fig. 50. PUERTO RICO, W.I. SEPTEMBER 1957

NBS 490

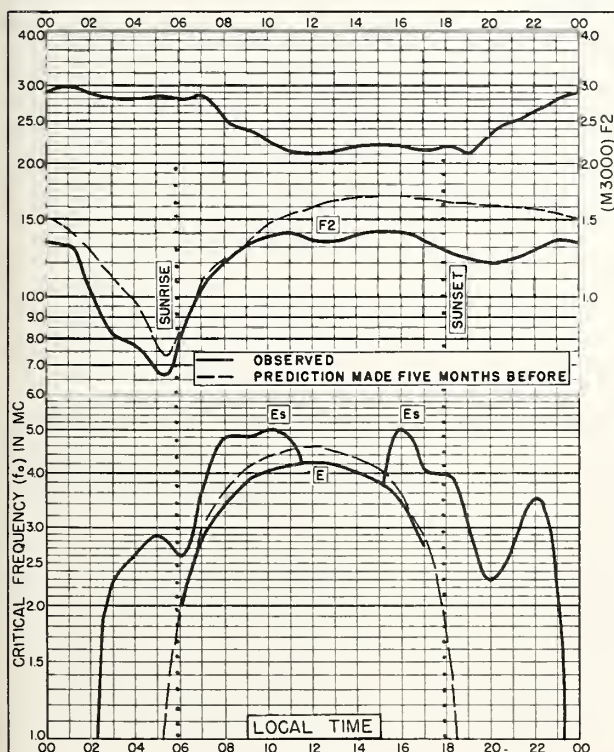


Fig. 51. BAGUIO, P.I.
16.4°N, 120.6°E SEPTEMBER 1957

NBS 503

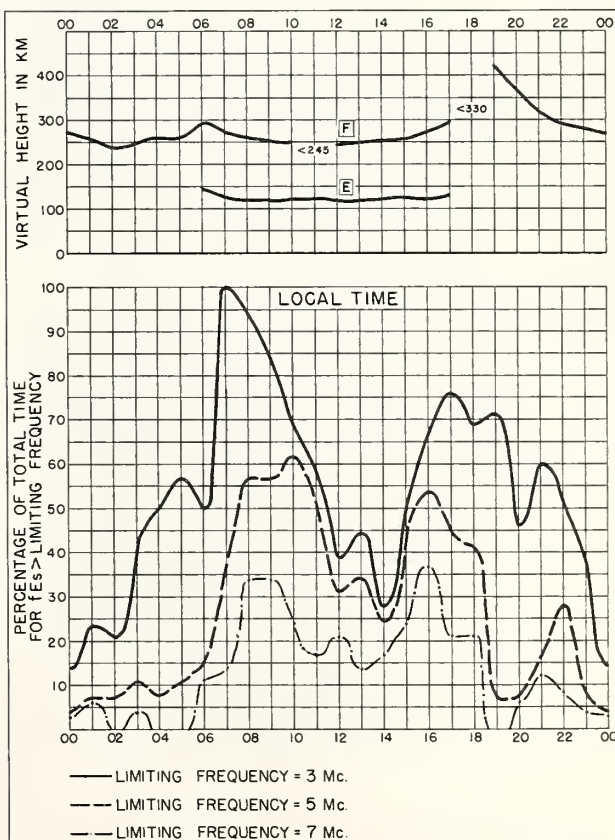


Fig. 52. BAGUIO, P.I. SEPTEMBER 1957

NBS 490

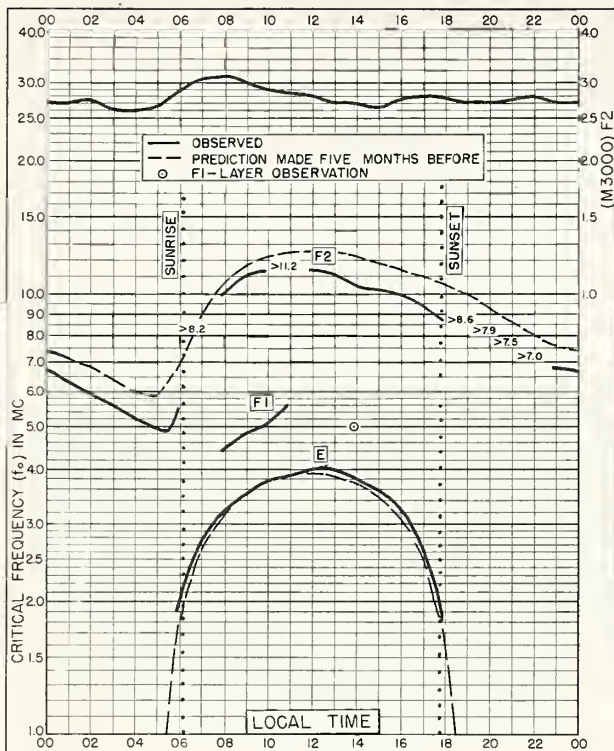
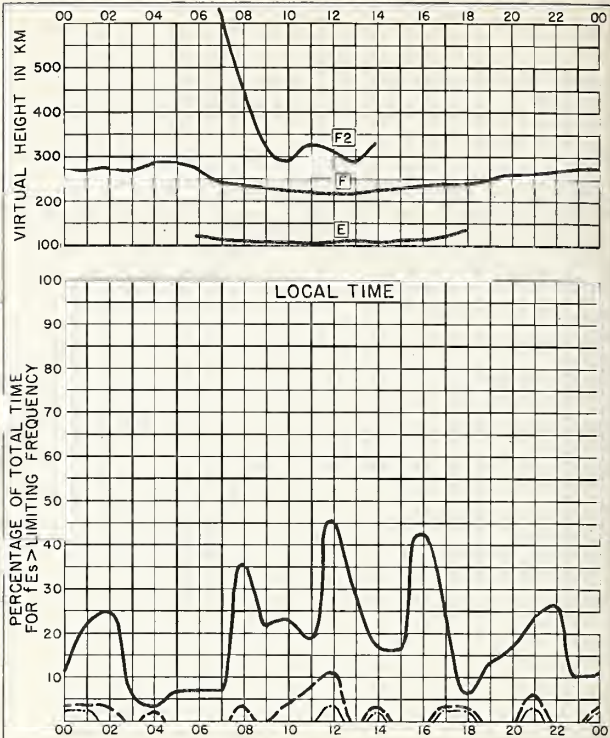


Fig. 53. CANBERRA, AUSTRALIA
35.3°S, 149.0°E SEPTEMBER 1957

NBS 503



— LIMITING FREQUENCY = 3 Mc.
 --- LIMITING FREQUENCY = 5 Mc.
 ... LIMITING FREQUENCY = 7 Mc.

SEPTEMBER 1957

Fig. 54. CANBERRA, AUSTRALIA

NBS 490

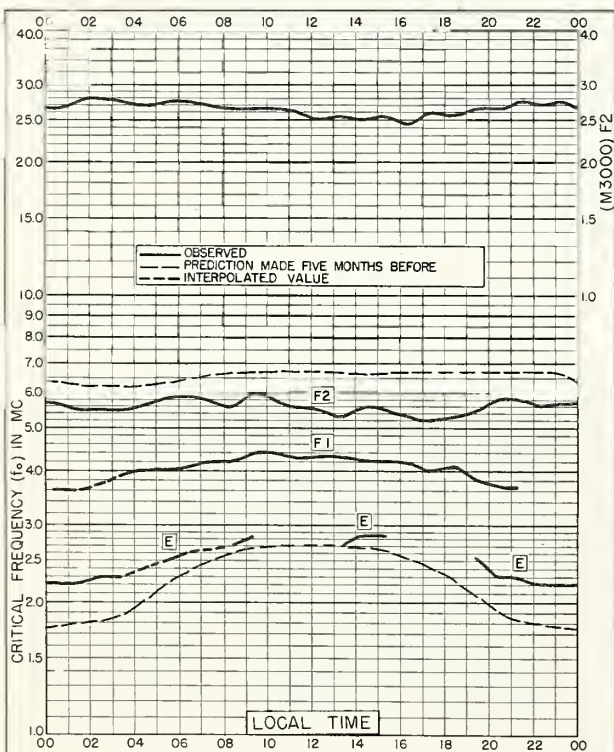
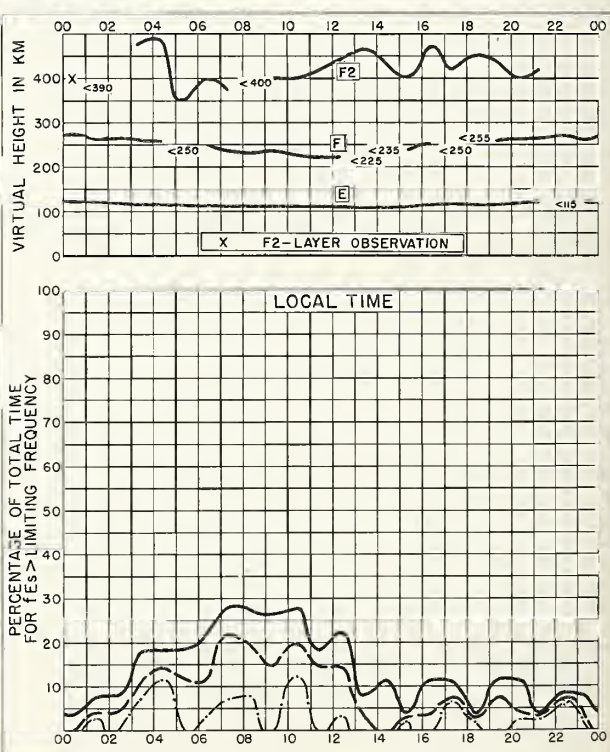


Fig. 55. FLETCHERS ICE I.
82.0°N, 101.0°W AUGUST 1957

NBS 503



— LIMITING FREQUENCY = 3 Mc.
 --- LIMITING FREQUENCY = 5 Mc.
 ... LIMITING FREQUENCY = 7 Mc.

AUGUST 1957

Fig. 56. FLETCHERS ICE I.

NBS 490

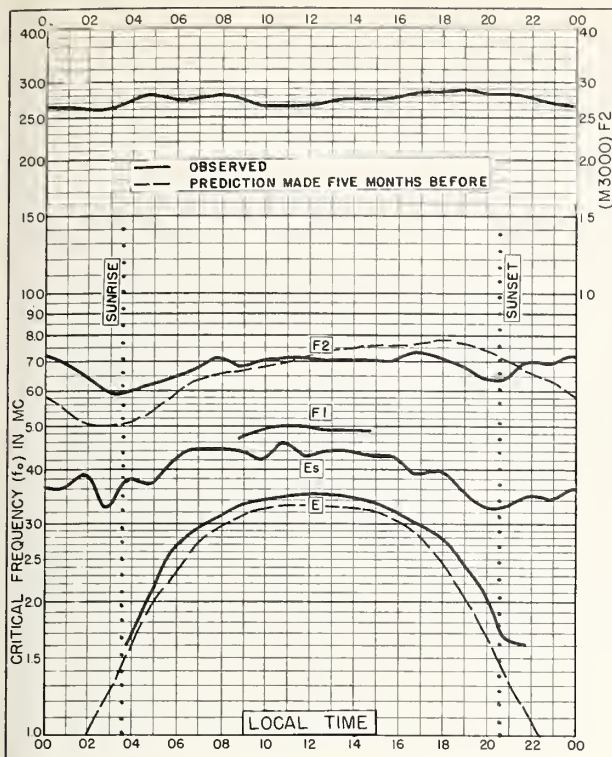


Fig. 57. SODANKYLA, FINLAND
67.4°N, 26.6°E AUGUST 1957

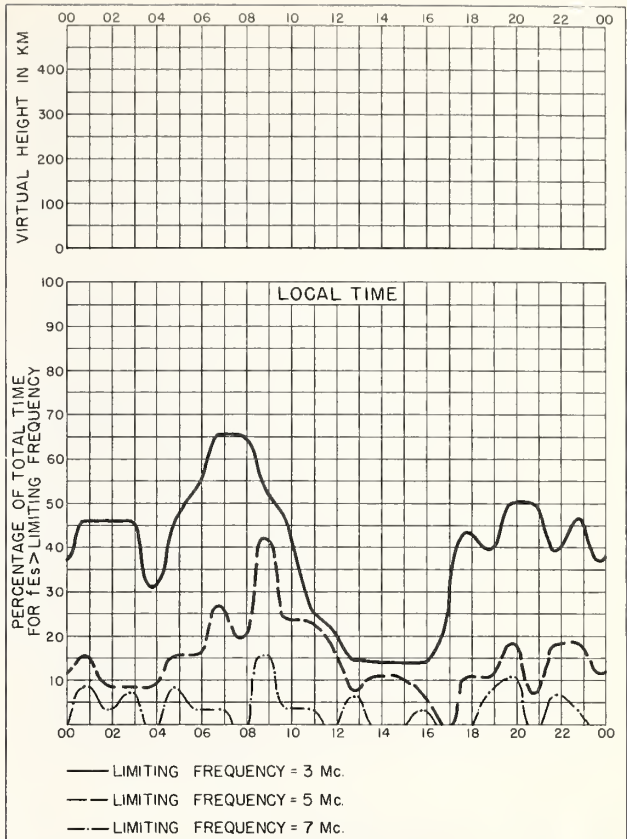


Fig. 58. SODANKYLA, FINLAND AUGUST 1957

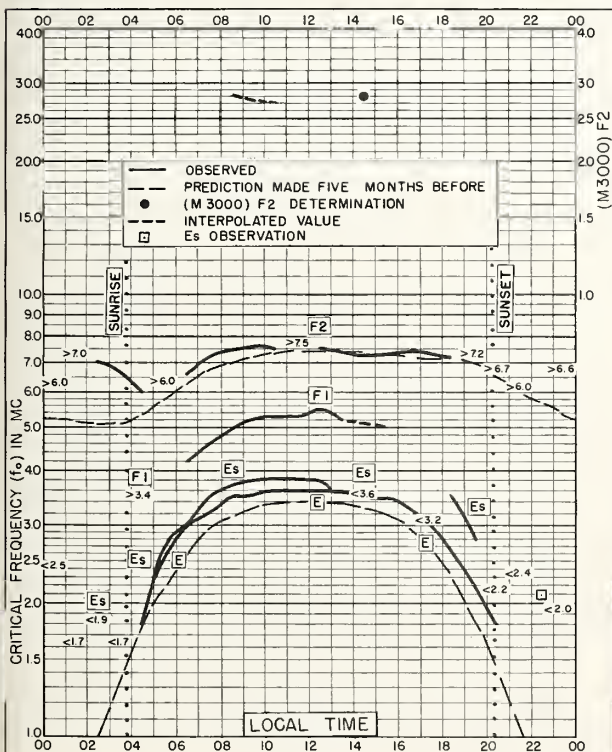


Fig. 59. LULEA, SWEDEN
65.6°N, 22.1°E AUGUST 1957

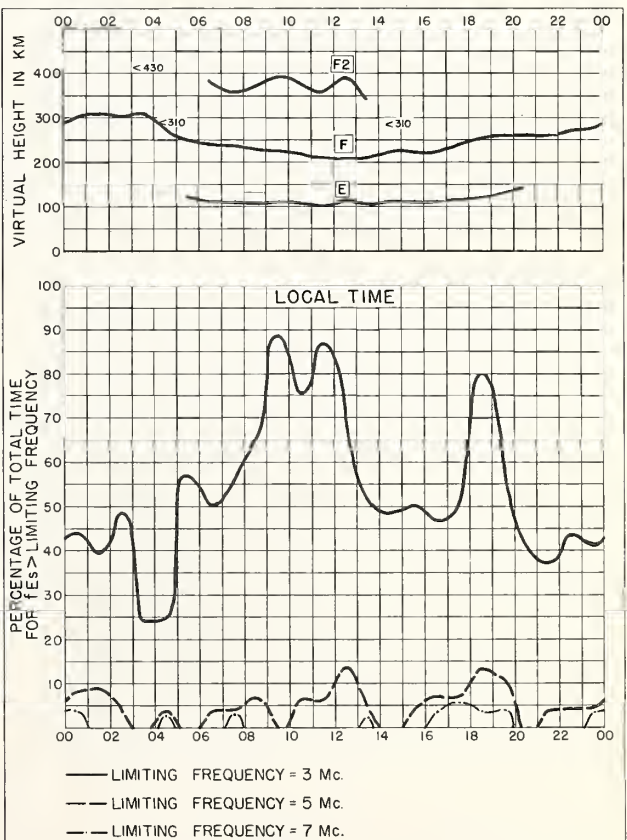


Fig. 60. LULEA, SWEDEN AUGUST 1957

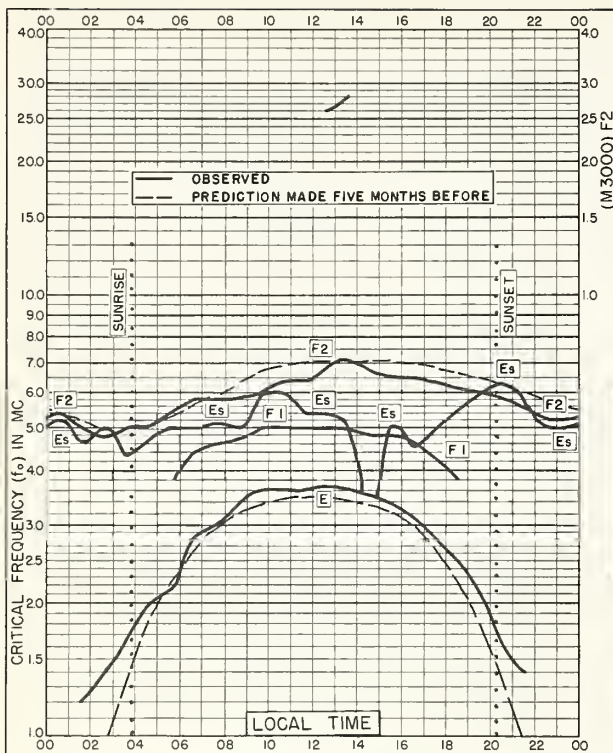


Fig. 61. BAKER LAKE, CANADA
64.3°N, 96.0°W

AUGUST 1957

NBS 503

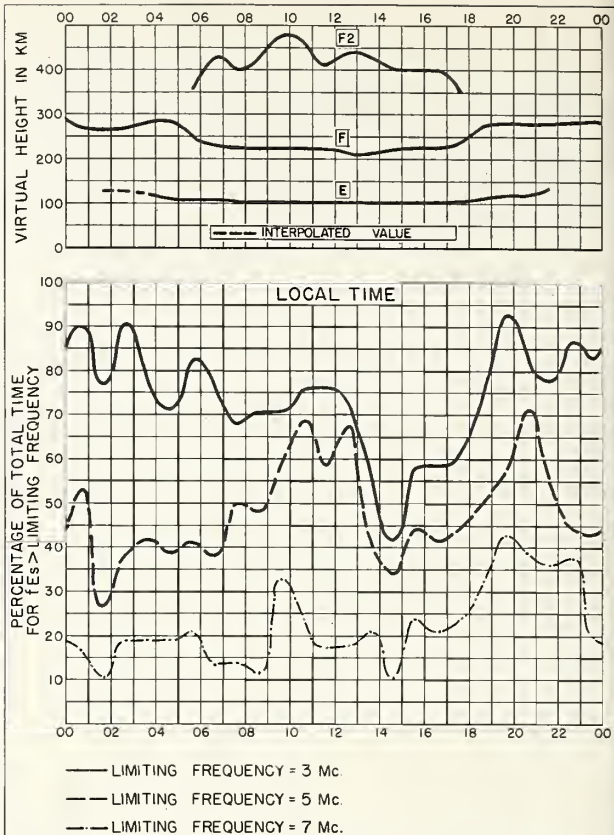


Fig. 62. BAKER LAKE, CANADA AUGUST 1957

Compass - Radiotele - Radio, Co.

NBS 490

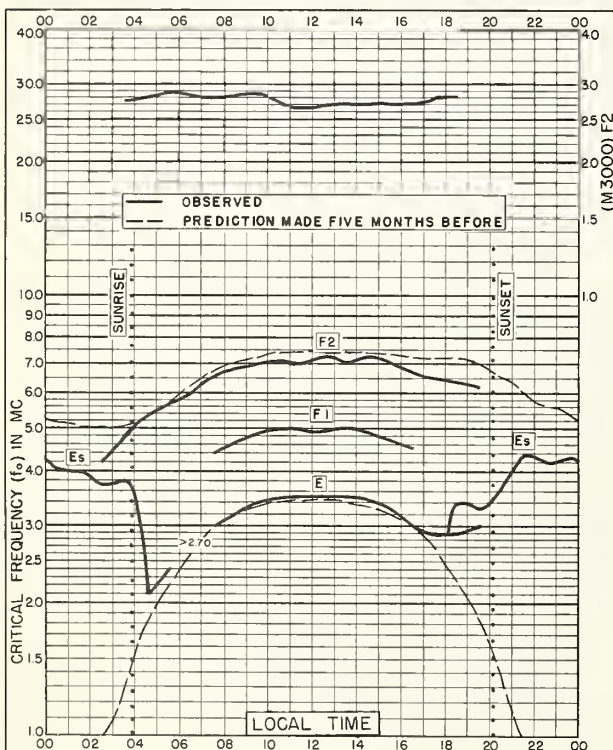


Fig. 63. REYKJAVIK, ICELAND
64.1°N, 21.8°W

AUGUST 1957

NBS 503

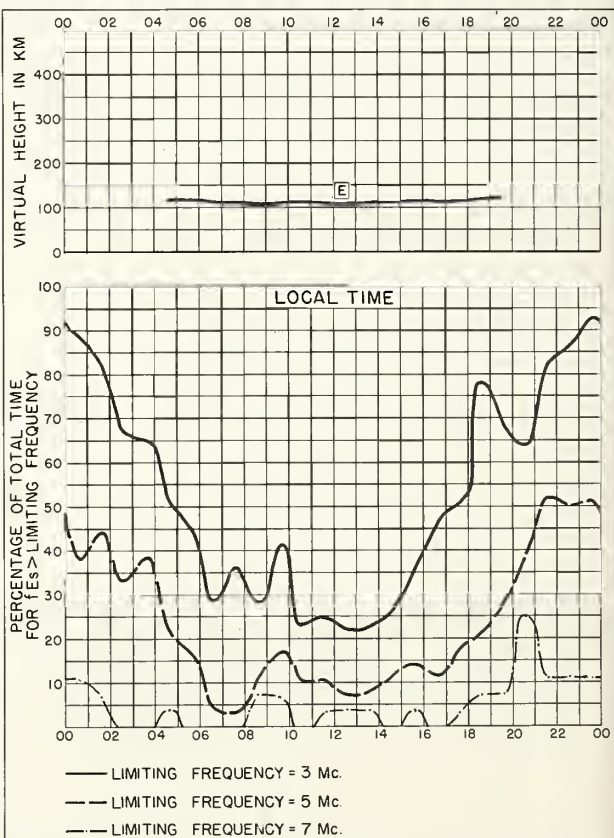


Fig. 64. REYKJAVIK, ICELAND AUGUST 1957

Compass - Radiotele - Radio, Co.

NBS 490

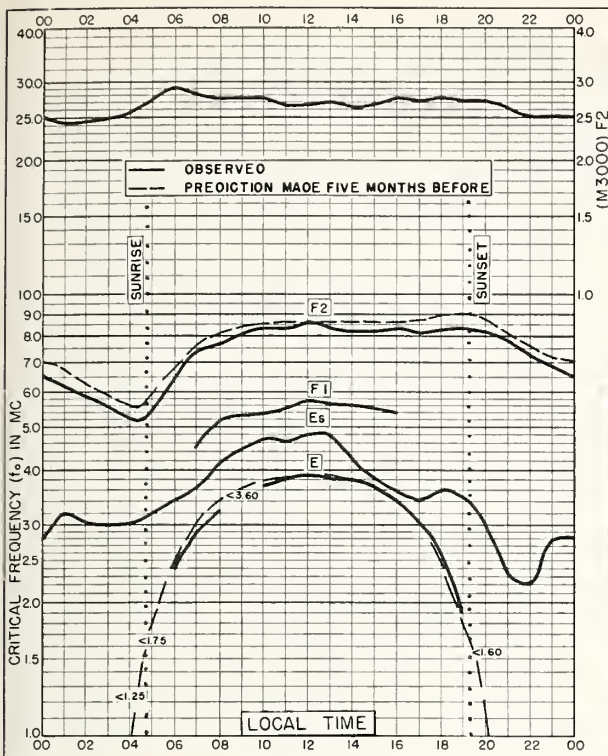


Fig. 65. SLOUGH, ENGLAND
51.5°N, 0.6°W

AUGUST 1957

NBS 503

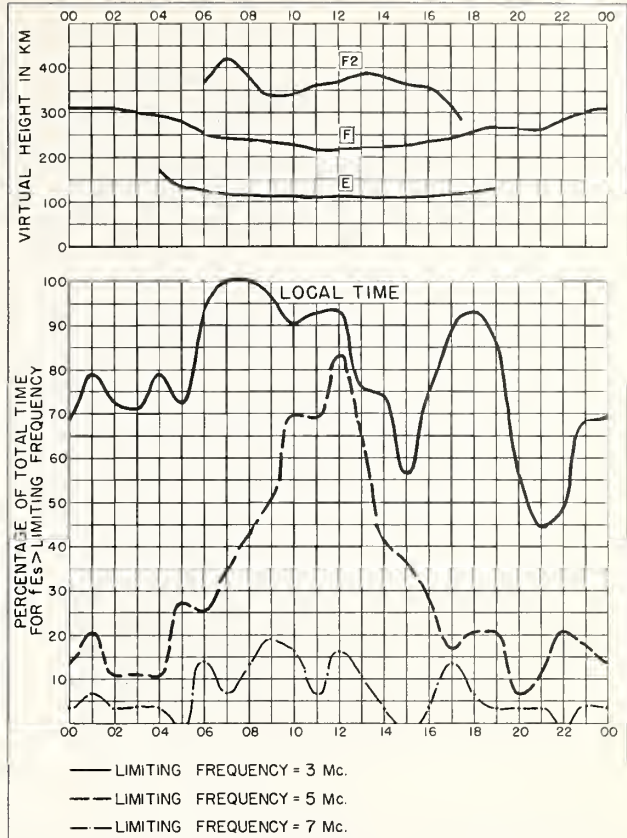


Fig. 66. SLOUGH, ENGLAND

AUGUST 1957

Commerce-Sandwich-Sandwich, Co.

NBS 430

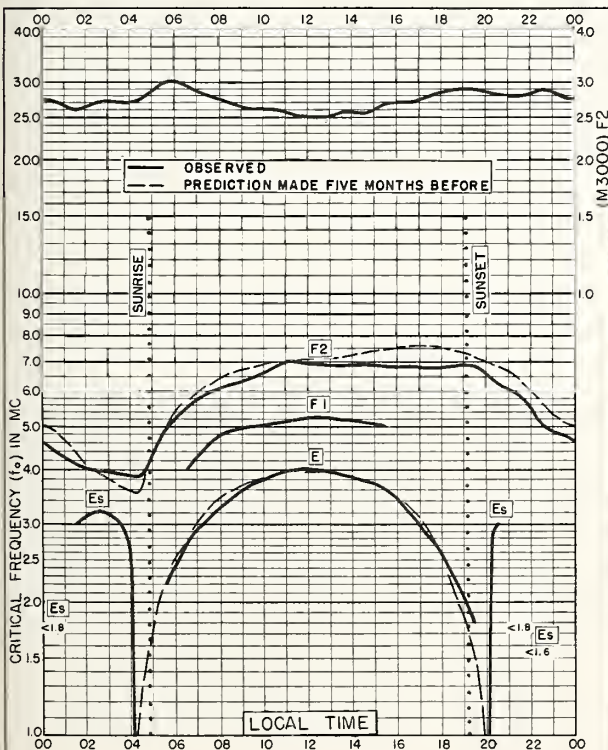


Fig. 67. WINNIPEG, CANADA
49.9°N, 97.4°W

AUGUST 1957

NBS 503

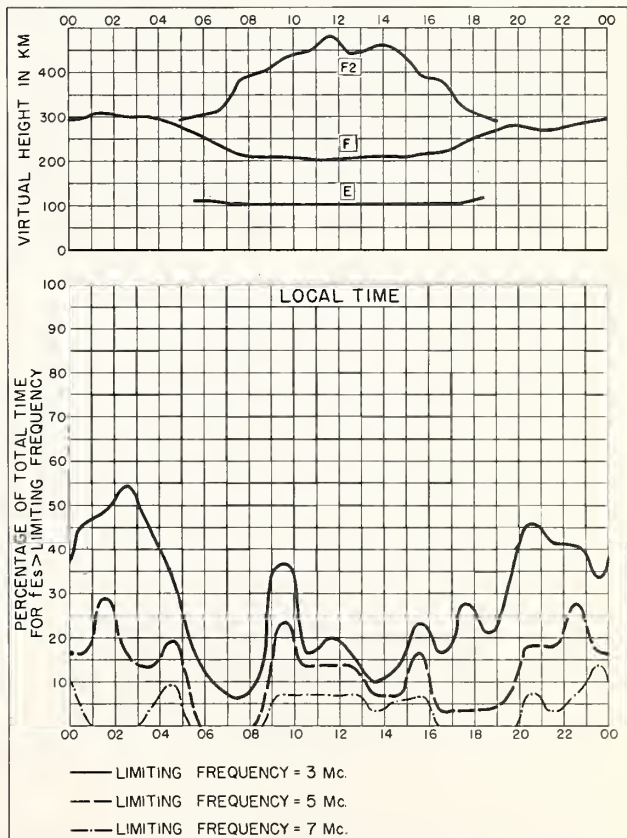


Fig. 68. WINNIPEG, CANADA

AUGUST 1957

Commerce-Sandwich-Sandwich, Co.

NBS 430

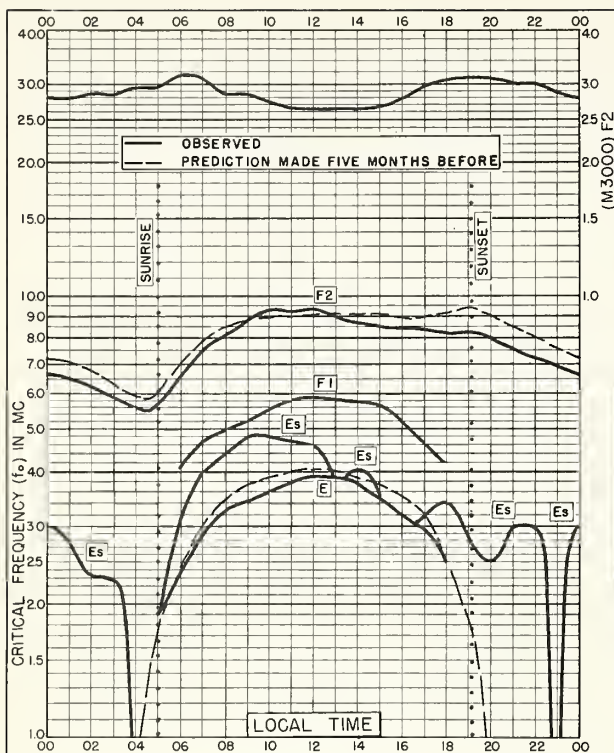


Fig. 69. BUDAPEST, HUNGARY
47.4°N, 19.2°E

AUGUST 1957

NBS 503

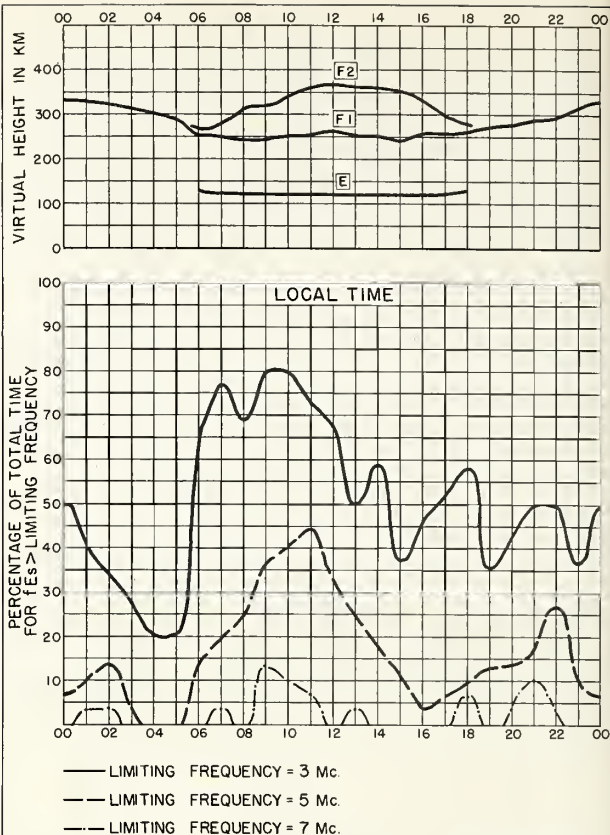


Fig. 70. BUDAPEST, HUNGARY

AUGUST 1957

C. Moore-Blondel, Boulder, Colo.

NBS 490

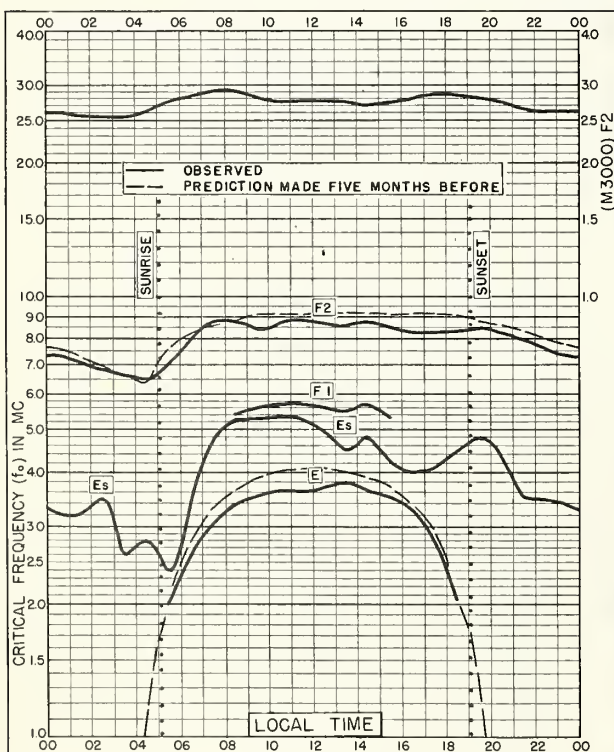


Fig. 71. WAKKANAI, JAPAN
45.4°N, 141.7°E

AUGUST 1957

NBS 503

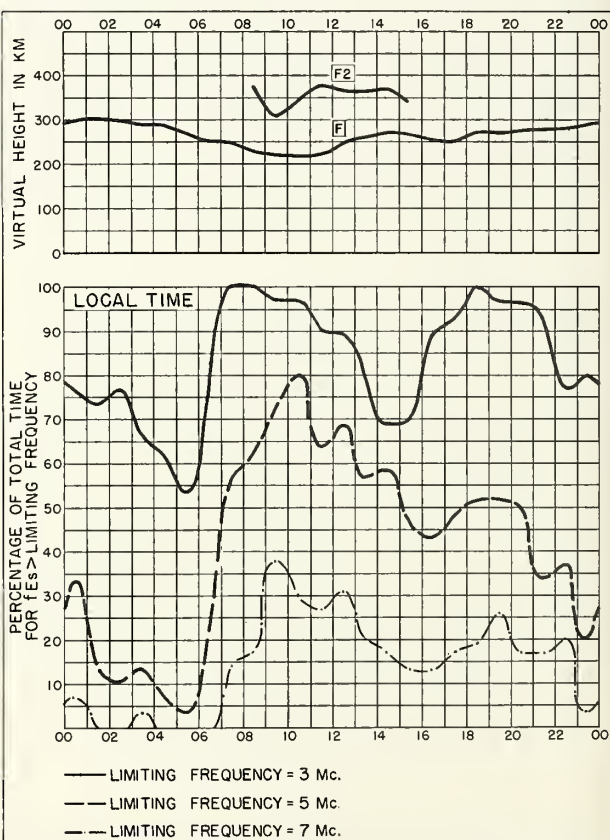


Fig. 72. WAKKANAI, JAPAN

AUGUST 1957

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

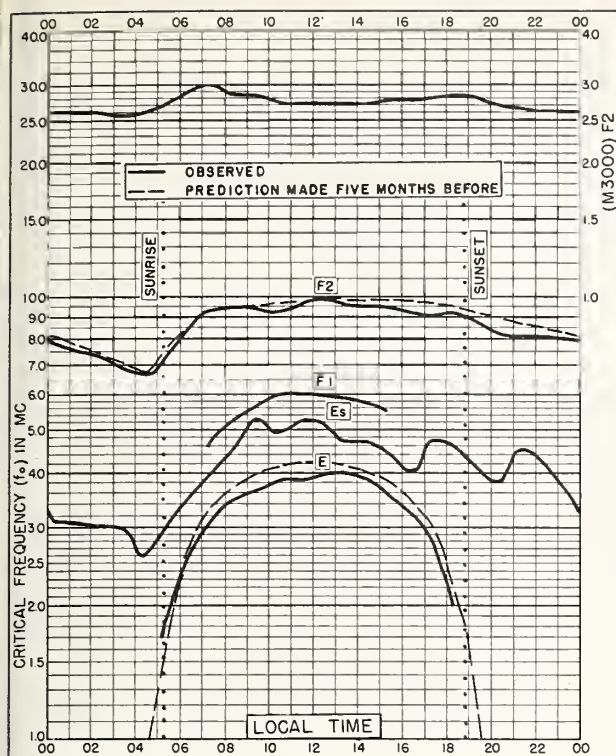


Fig. 73. AKITA, JAPAN
39.7°N, 140.1°E

AUGUST 1957

NBS 503

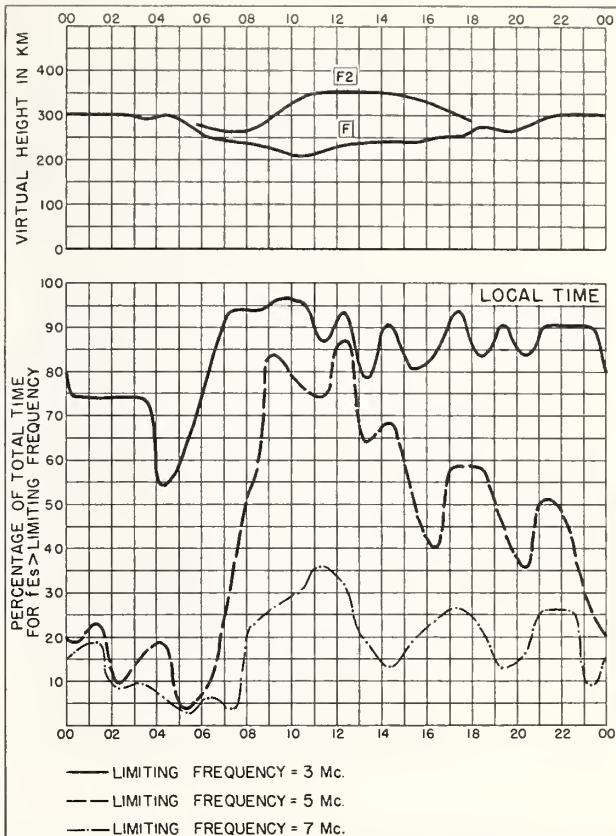


Fig. 74. AKITA, JAPAN

AUGUST 1957

NBS 490

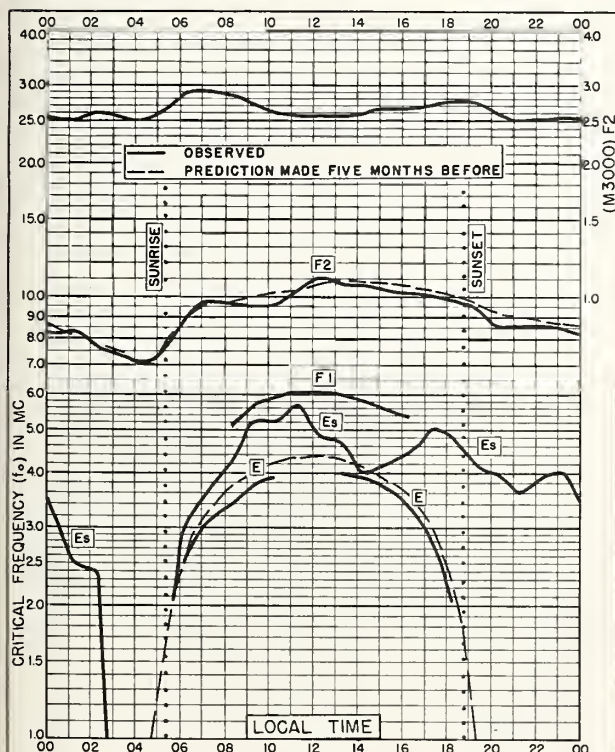


Fig. 75. TOKYO, JAPAN
35.7°N, 139.5°E

AUGUST 1957

NBS 503

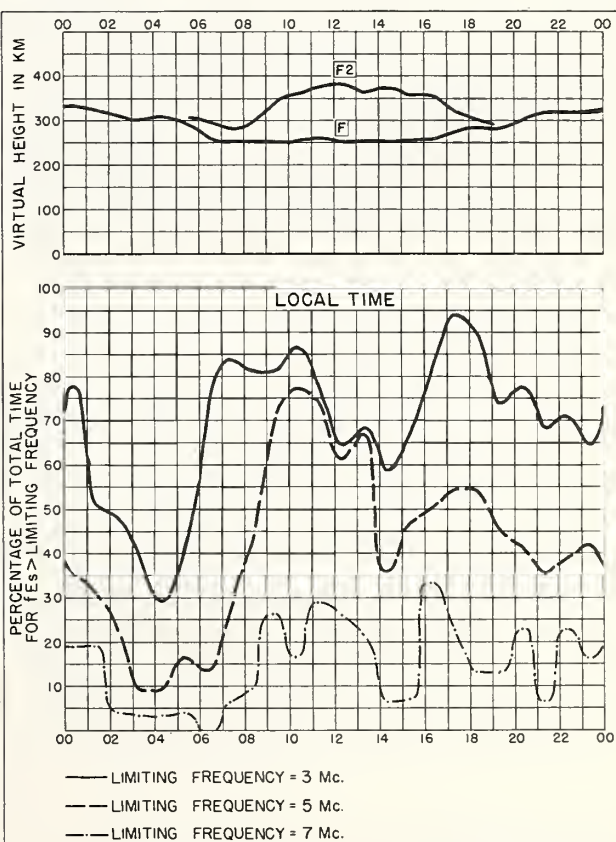


Fig. 76. TOKYO, JAPAN

AUGUST 1957

NBS 490

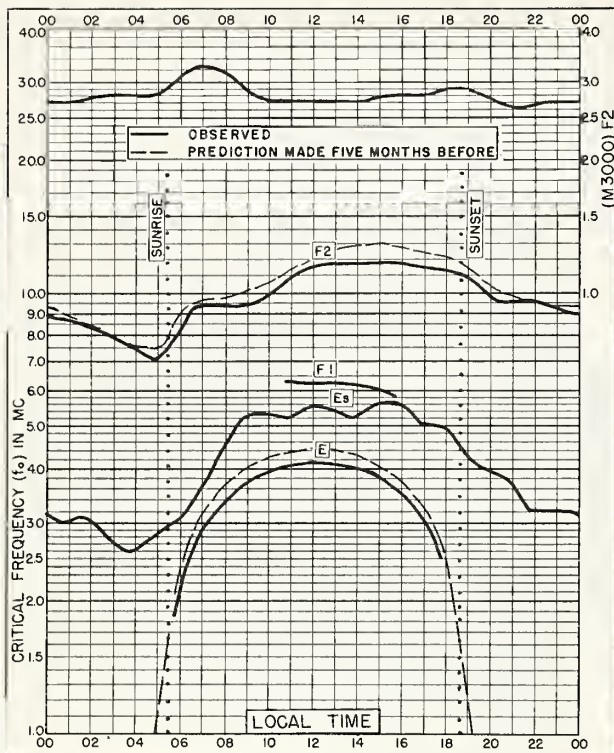


Fig. 77. YAMAGAWA, JAPAN
31.2°N, 130.6°E

AUGUST 1957

NBS 503

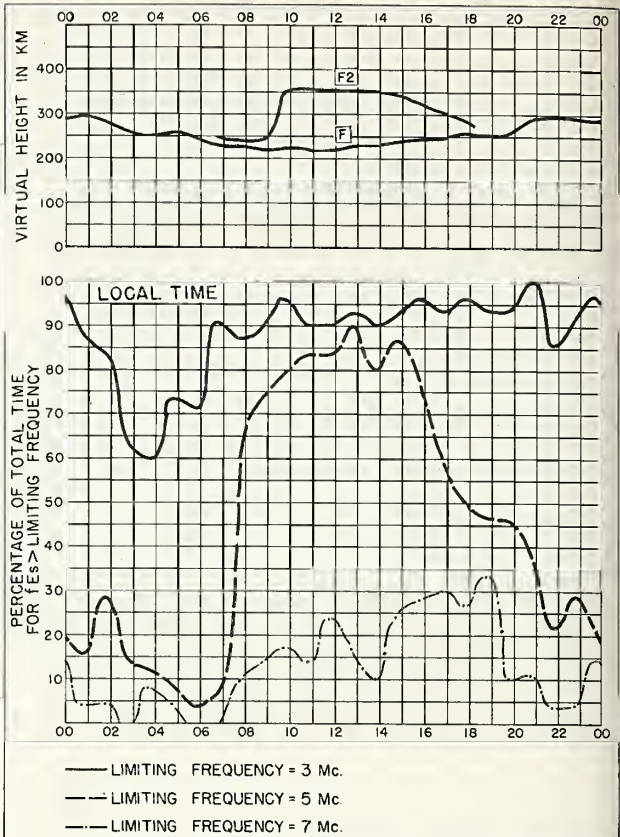


Fig. 78. YAMAGAWA, JAPAN

AUGUST 1957

NBS 499

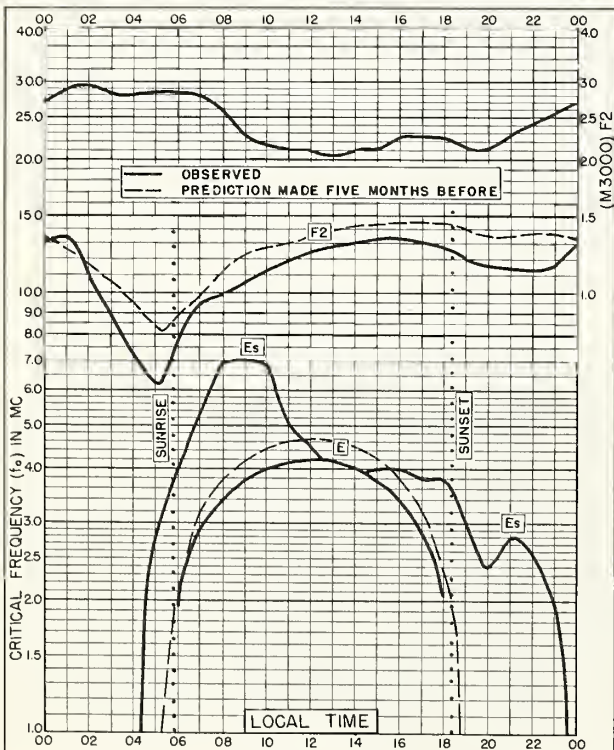


Fig. 79. BAGUIO, P.I.
16.4°N, 120.6°E

AUGUST 1957

NBS 503

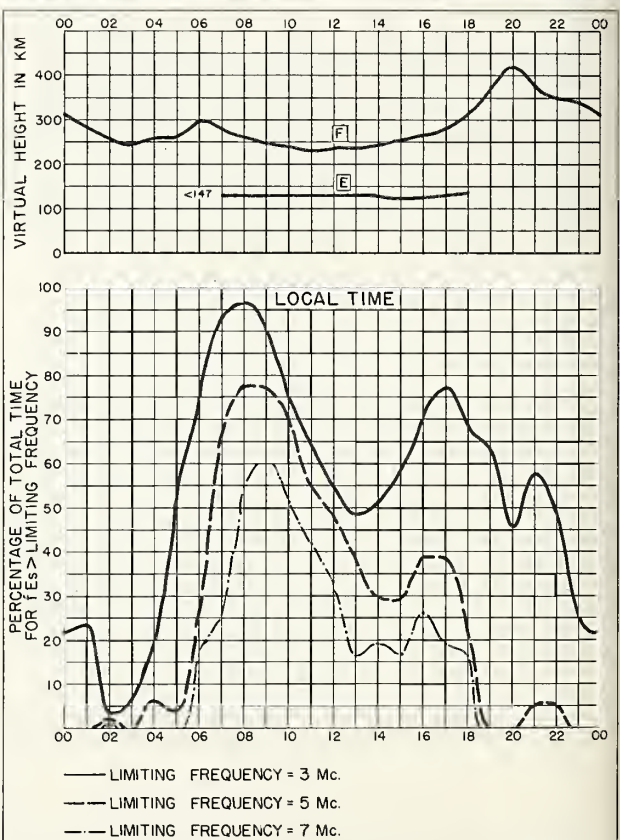


Fig. 80. BAGUIO, P.I.

AUGUST 1957

NBS 499

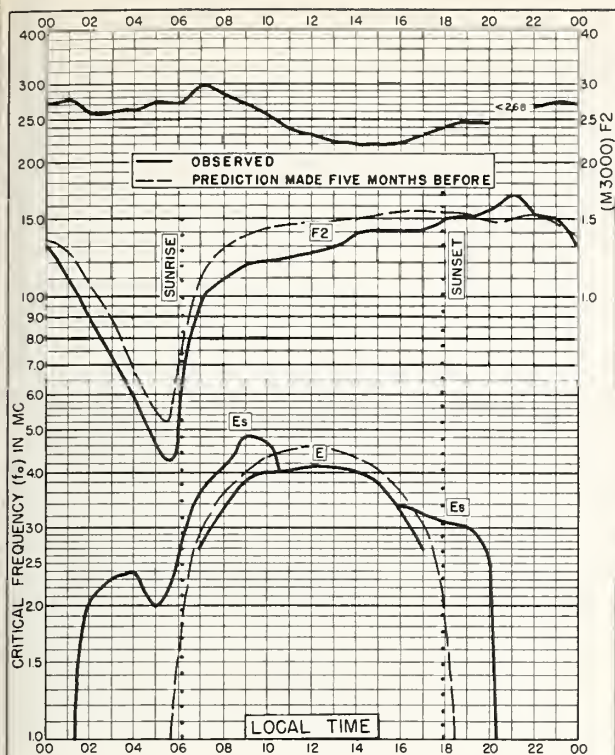


Fig. 81. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E
AUGUST 1957

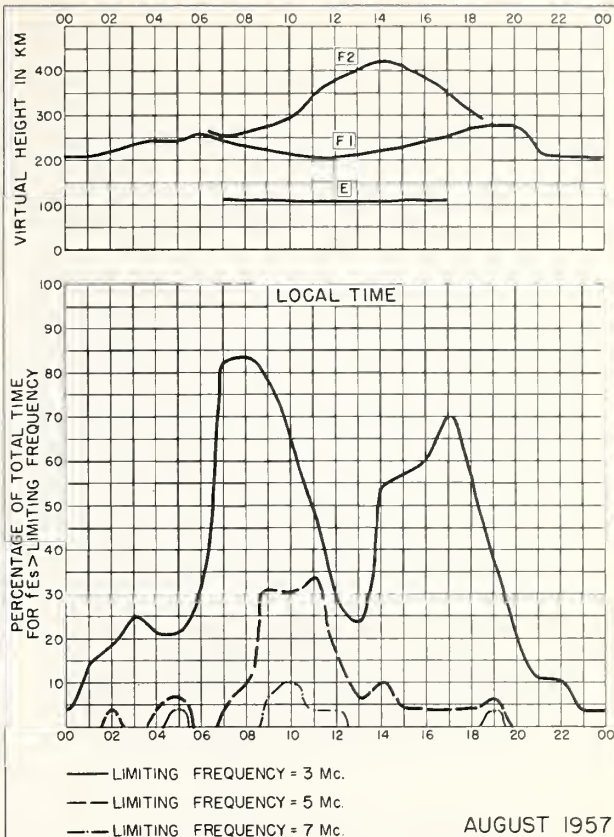


Fig. 82. LEOPOLDVILLE, BELGIAN CONGO

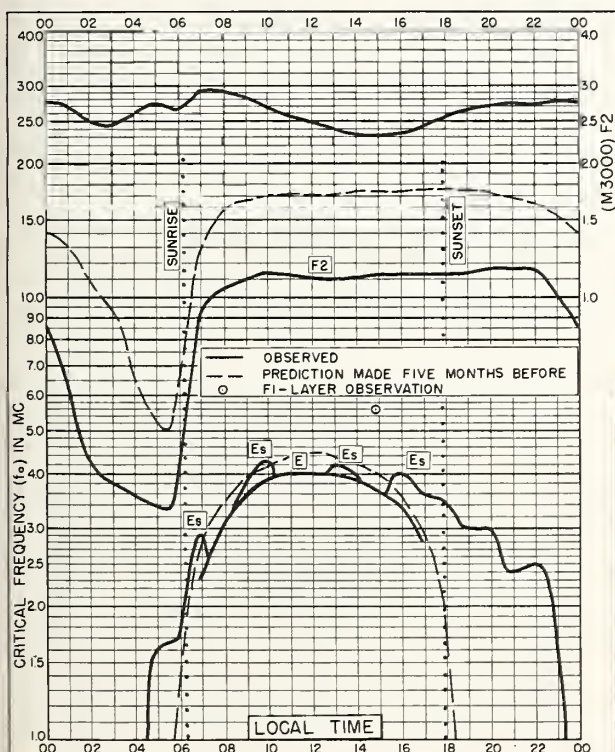


Fig. 83. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E
AUGUST 1957

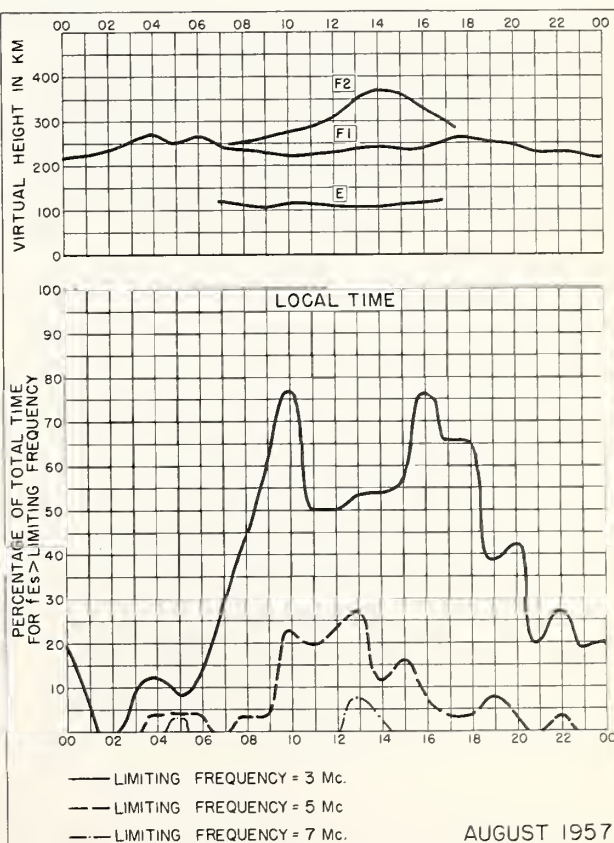


Fig. 84. ELISABETHVILLE, BELGIAN CONGO

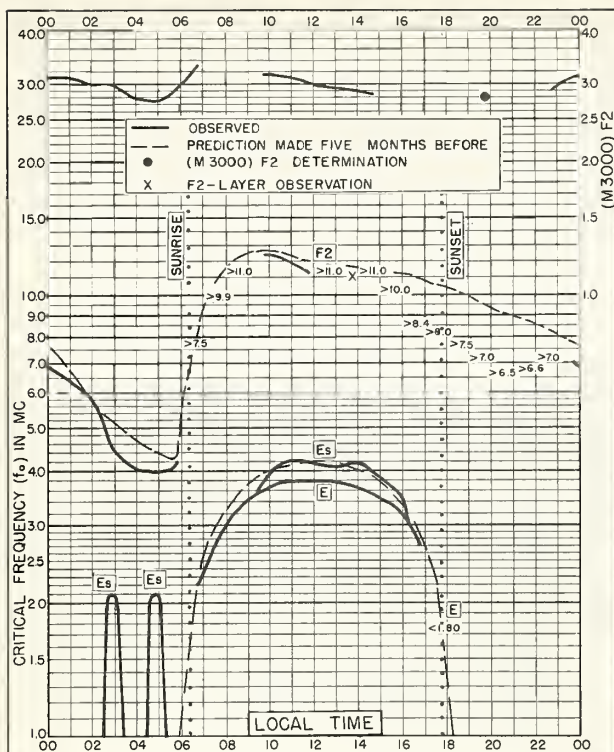
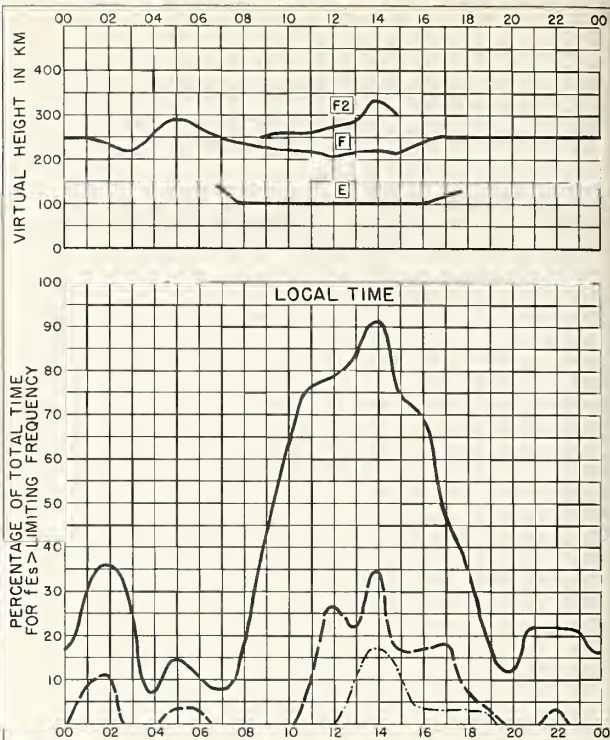


Fig. 85. TOWNVILLE, AUSTRALIA
19.3°S, 146.7°E AUGUST 1957

NBS 503



— LIMITING FREQUENCY = 3 Mc.
- - - LIMITING FREQUENCY = 5 Mc.
- · - · - LIMITING FREQUENCY = 7 Mc.

AUGUST 1957

Fig. 86. TOWNVILLE, AUSTRALIA

NBS 490

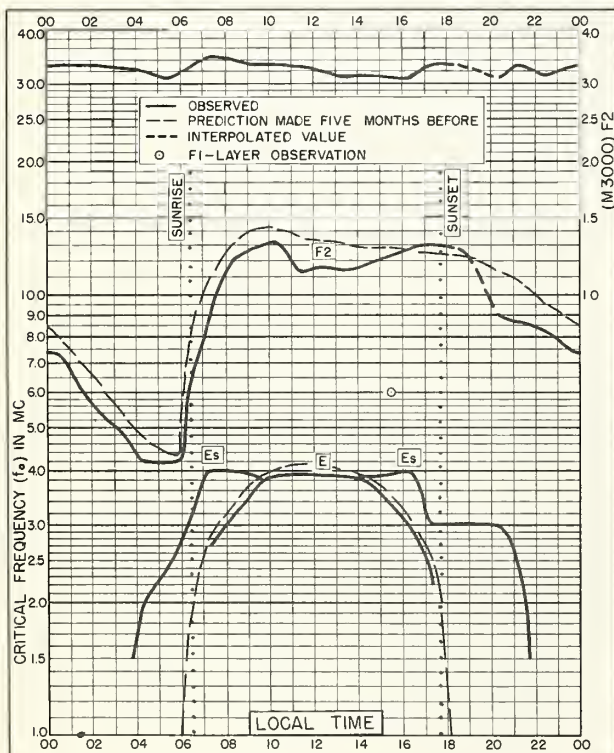
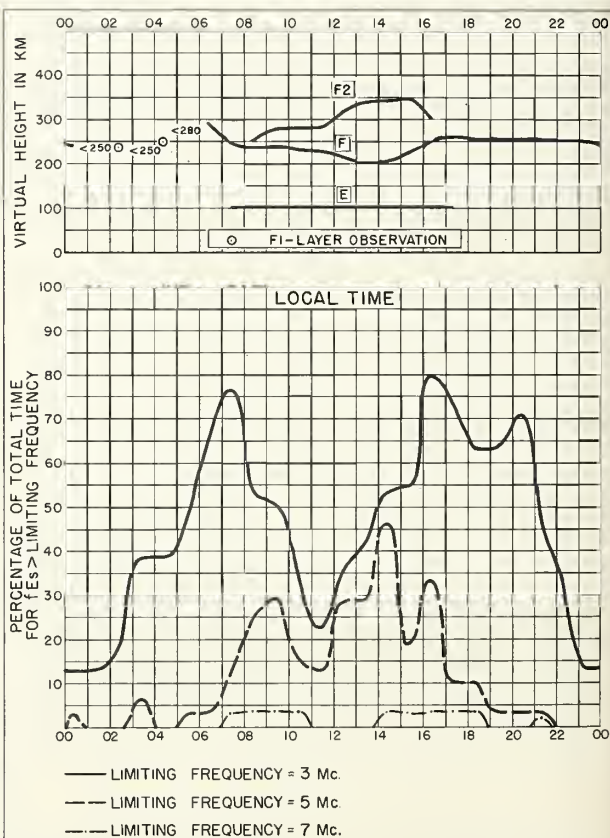


Fig. 87. RAROTONGA I.
21.2°S, 159.8°W AUGUST 1957

NBS 503



— LIMITING FREQUENCY = 3 Mc.
- - - LIMITING FREQUENCY = 5 Mc.
- · - · - LIMITING FREQUENCY = 7 Mc.

Fig. 88. RAROTONGA I.

AUGUST 1957

NBS 490

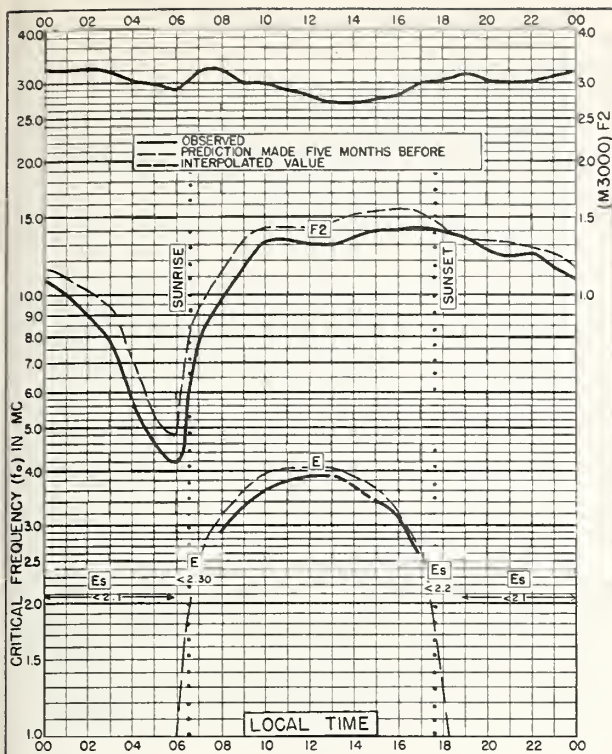


Fig. 89. SAO PAULO, BRAZIL
23.5°S, 46.5°W

AUGUST 1957

NBS 503

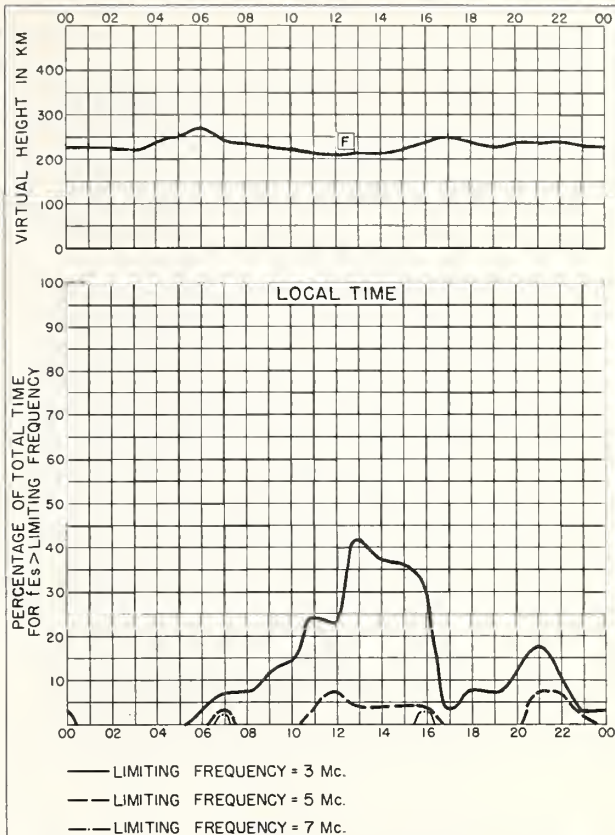


Fig. 90. SAO PAULO, BRAZIL

AUGUST 1957

NBS 490

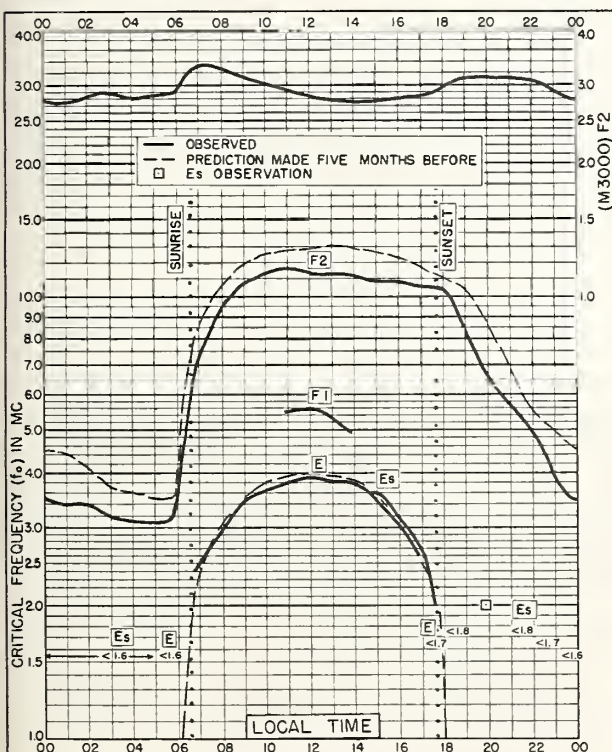


Fig. 91. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E

AUGUST 1957

NBS 503

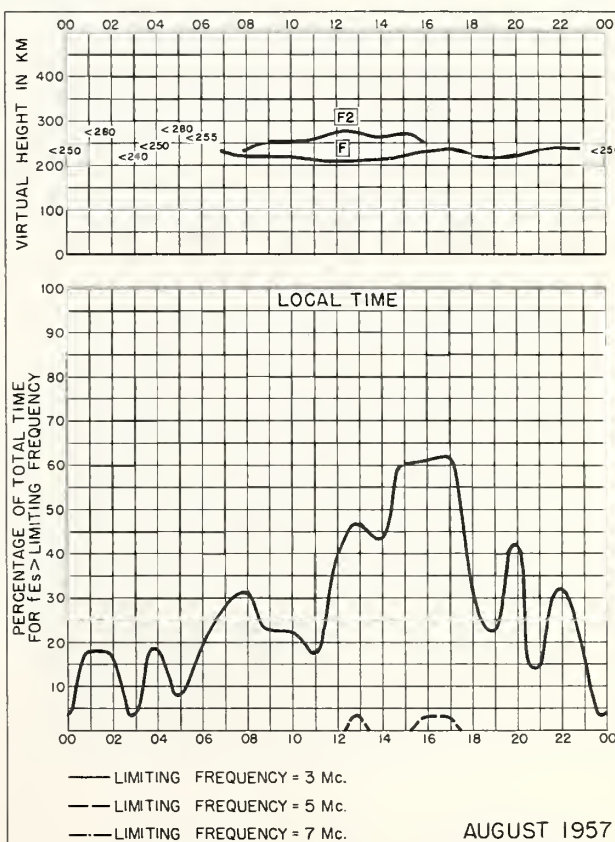


Fig. 92. JOHANNESBURG, UNION OF S. AFRICA

AUGUST 1957

NBS 490

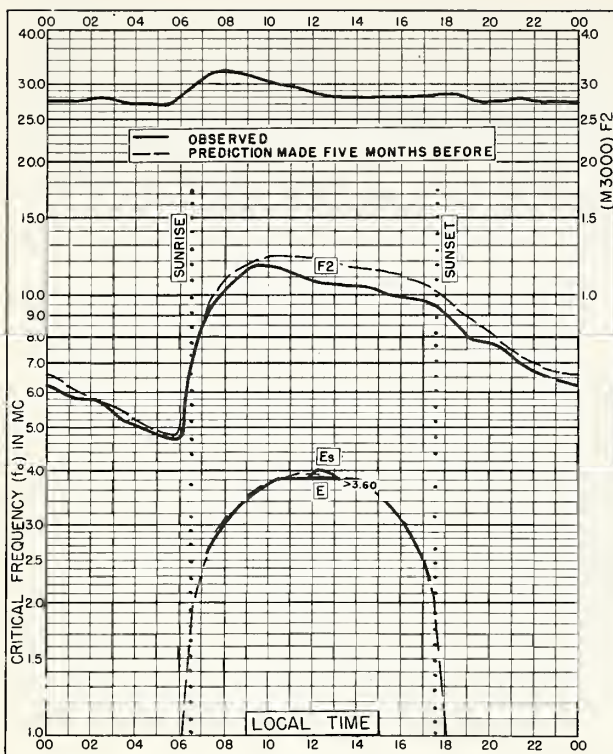


Fig. 93. BRISBANE, AUSTRALIA
27.5°S, 152.9°E

AUGUST 1957

NBS 505

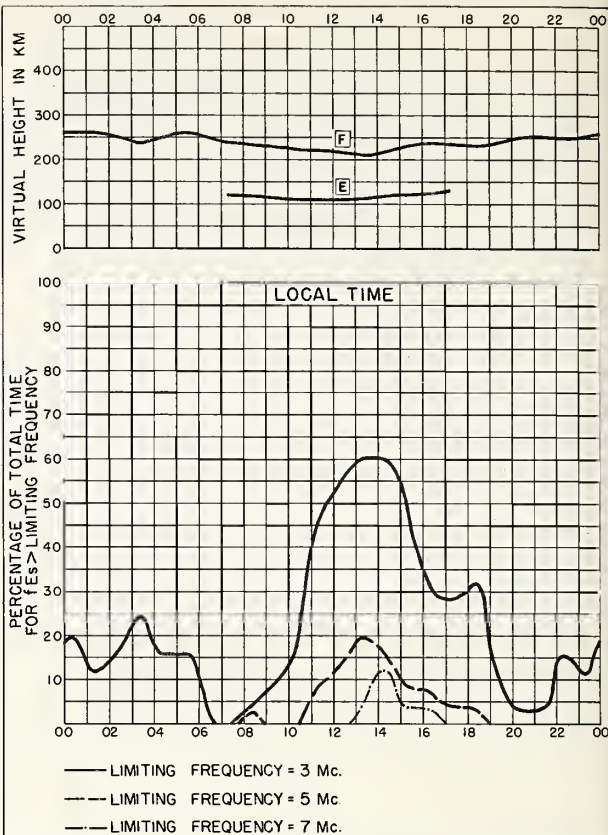


Fig. 94. BRISBANE, AUSTRALIA

AUGUST 1957

Commerce-Weather-Broadcast, Co.

NBS 450

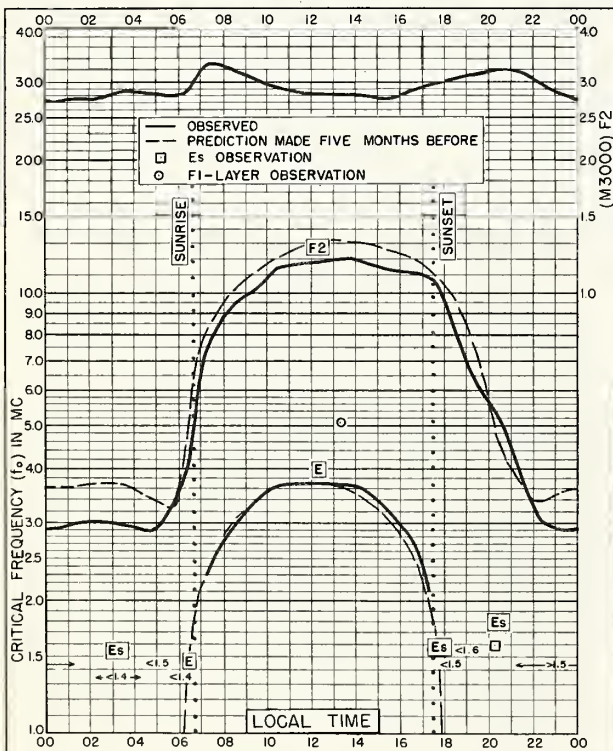


Fig. 95. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E

AUGUST 1957

NBS 505

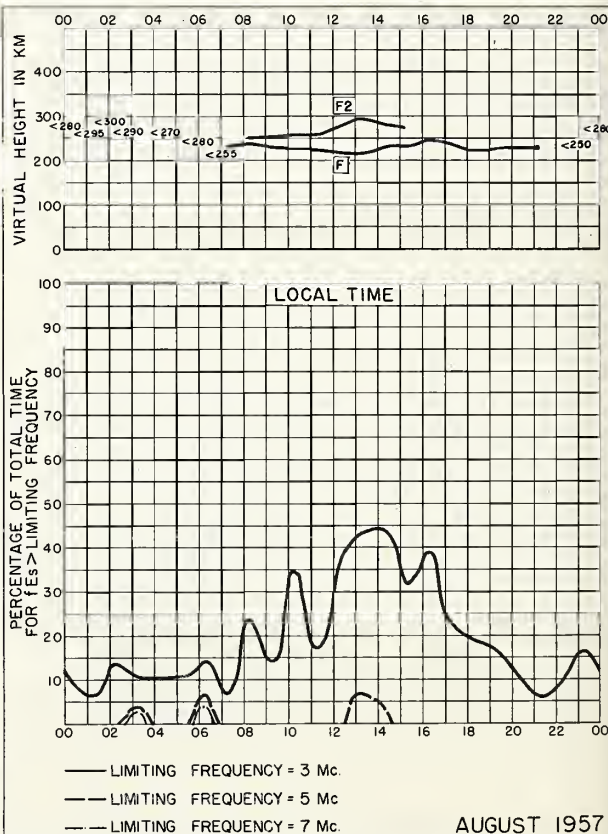


Fig. 96. CAPETOWN, UNION OF S. AFRICA

AUGUST 1957

Commerce-Weather-Broadcast, Co.

NBS 450

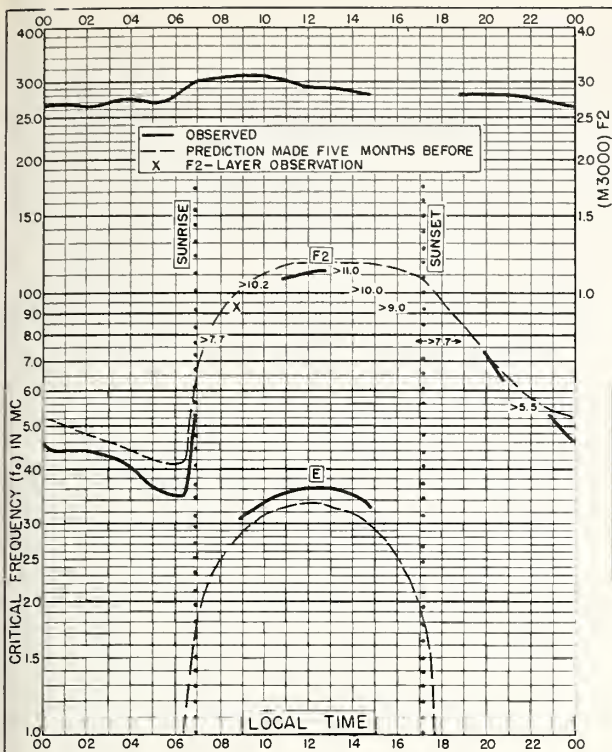


Fig. 97. HOBART, TASMANIA
42.9°S, 147.2°E

AUGUST 1957

NBS 503

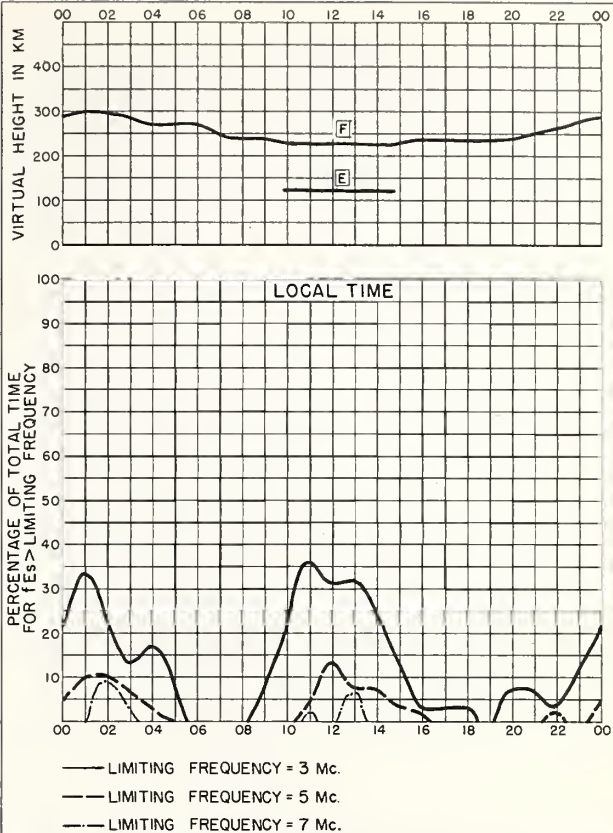


Fig. 98. HOBART, TASMANIA

AUGUST 1957

NBS 490

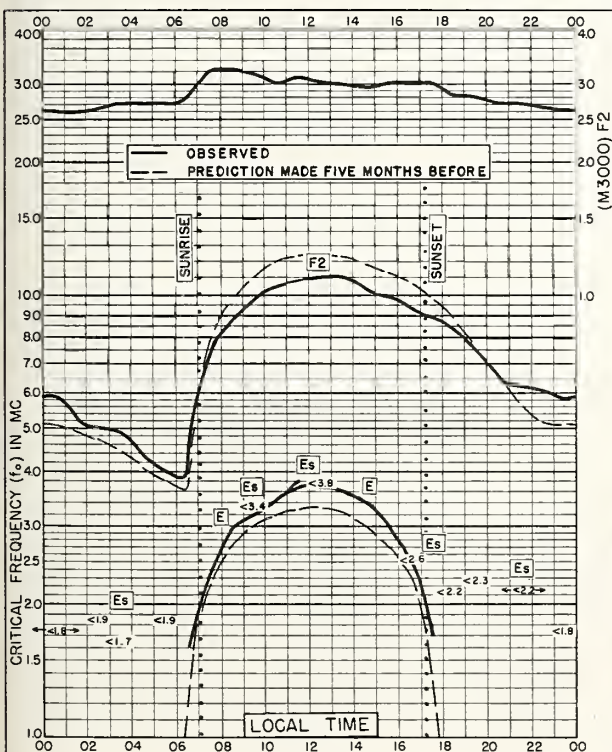


Fig. 99. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E

AUGUST 1957

NBS 503

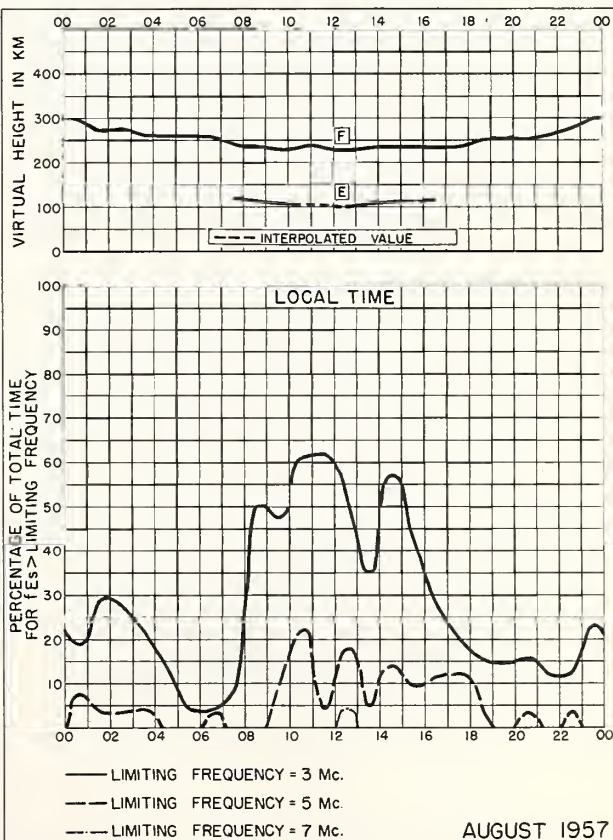


Fig. 100. CHRISTCHURCH, NEW ZEALAND

AUGUST 1957

NBS 490

Commerce-Standard-Boulton, Colo.

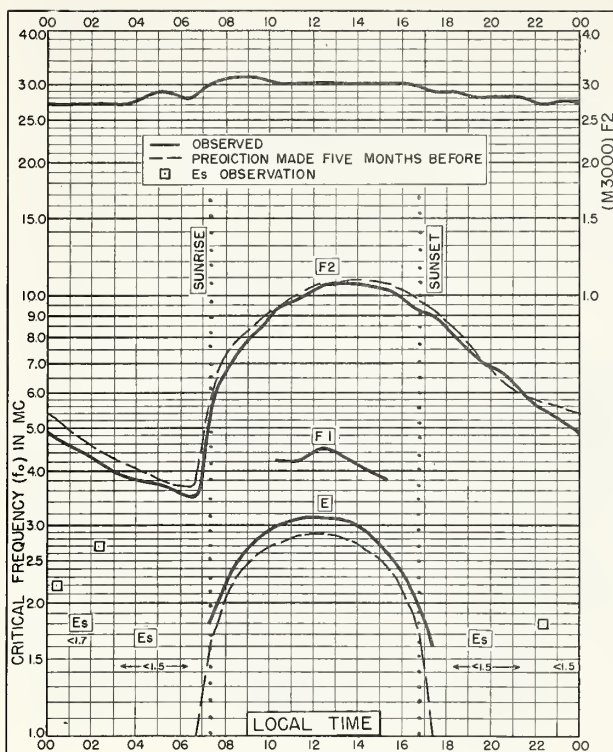


Fig. 101. CAMPBELL I.
52.5°S, 169.2°E

AUGUST 1957

NBS 503

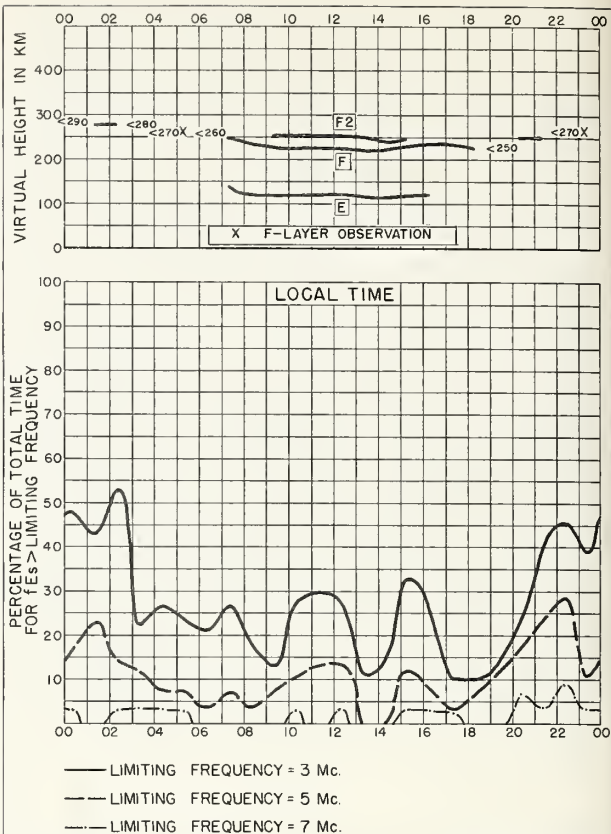


Fig. 102. CAMPBELL I.

AUGUST 1957

NBS 490

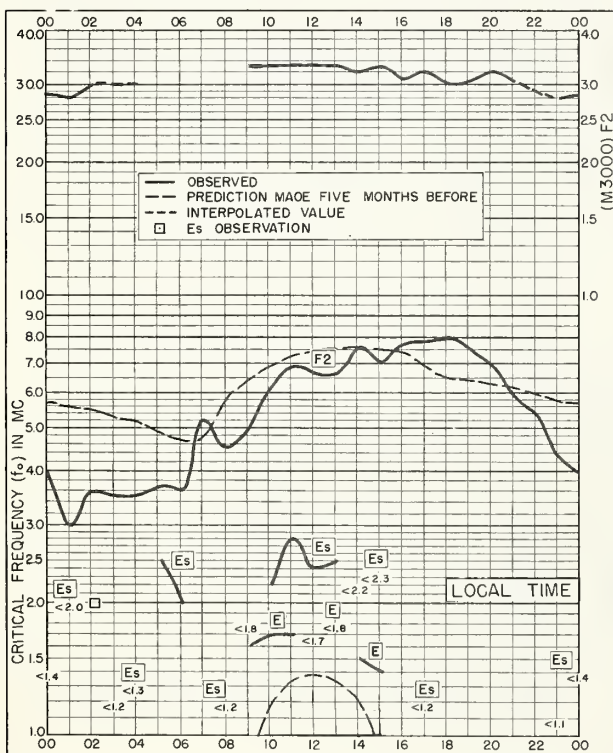


Fig. 103. SCOTT BASE
77.8°S, 166.8°E

AUGUST 1957

NBS 503

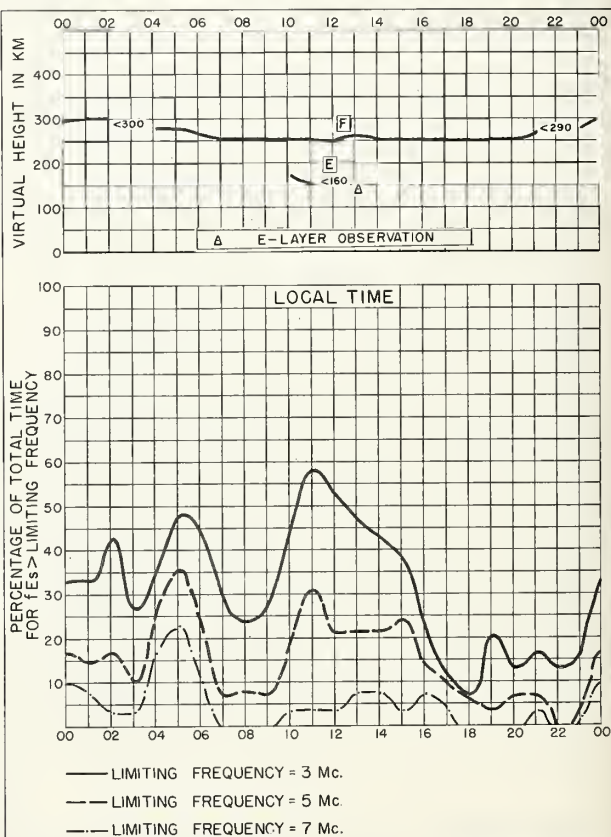


Fig. 104. SCOTT BASE

AUGUST 1957

NBS 490

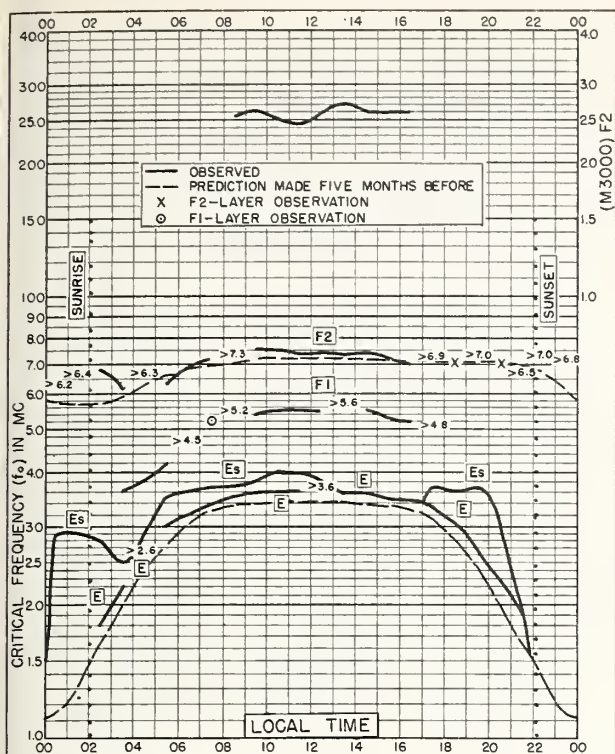


Fig. 105. LULEA, SWEDEN
65.6°N, 22.1°E

JULY 1957

NBS 503

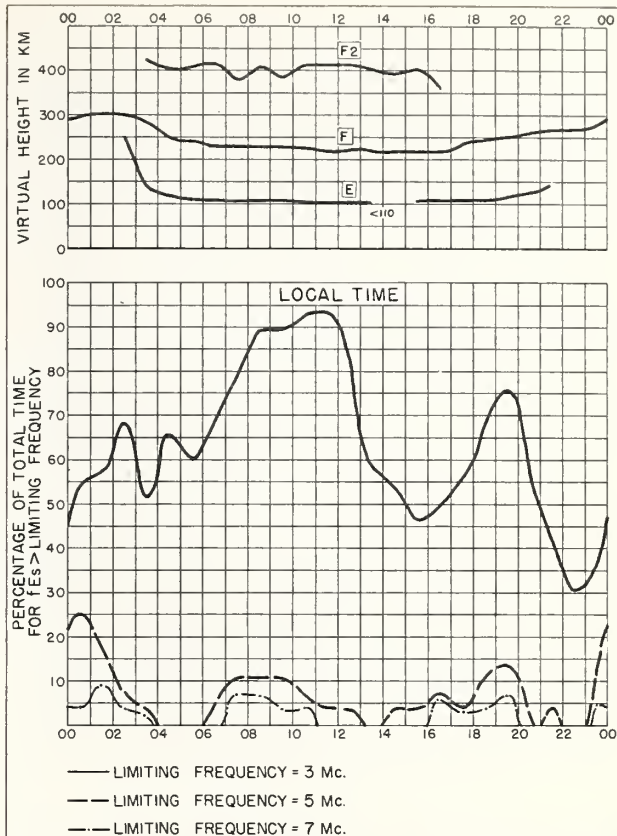


Fig. 106. LULEA, SWEDEN

JULY 1957

NBS 490

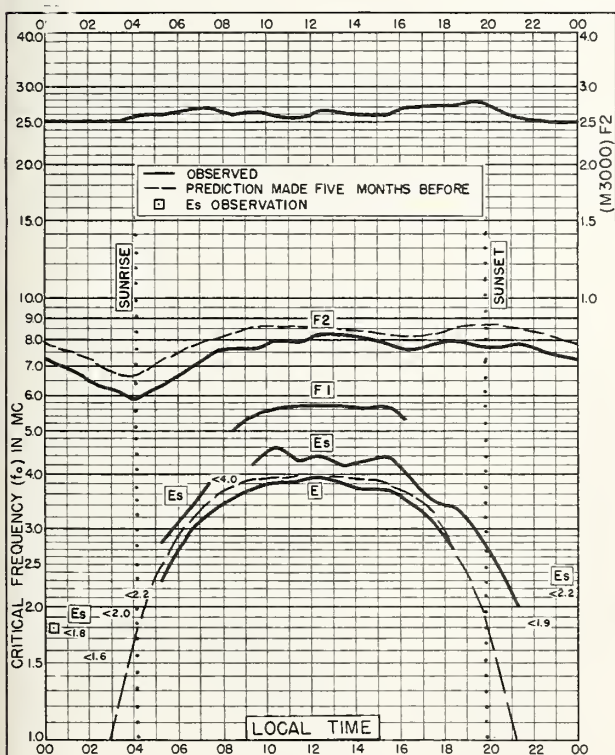


Fig. 107. DOURBES, BELGIUM
50.1°N, 4.6°E

JULY 1957

NBS 503

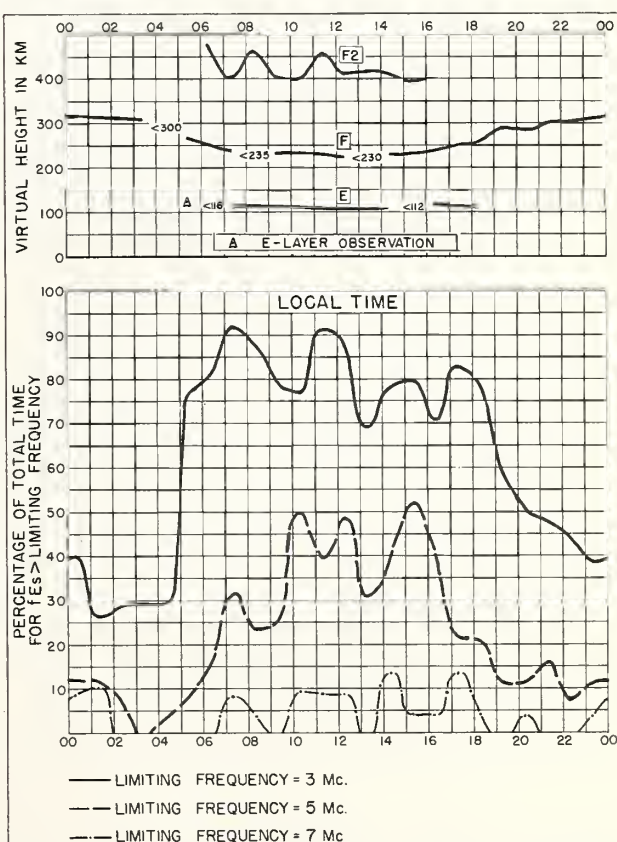


Fig. 108. DOURBES, BELGIUM

JULY 1957

NBS 490

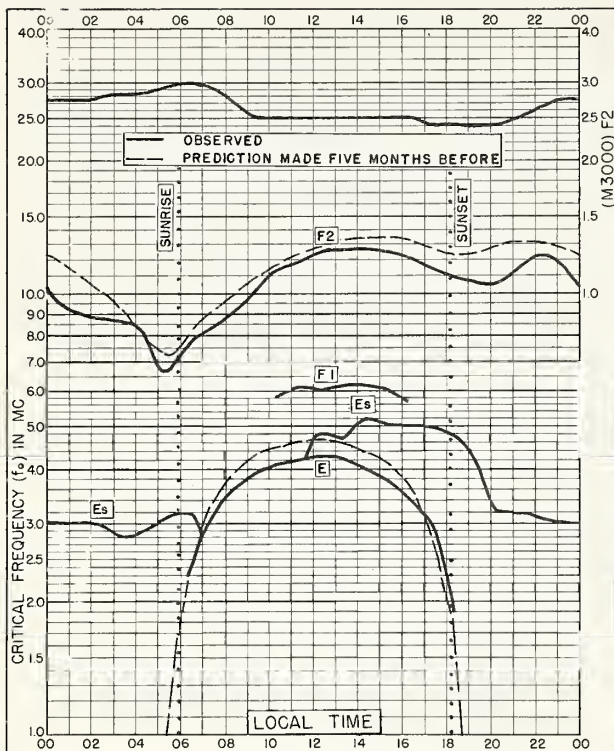


Fig. 109. PARAMARIBO, SURINAM
5.8°N, 55.2°W

JULY 1957

NBS 503

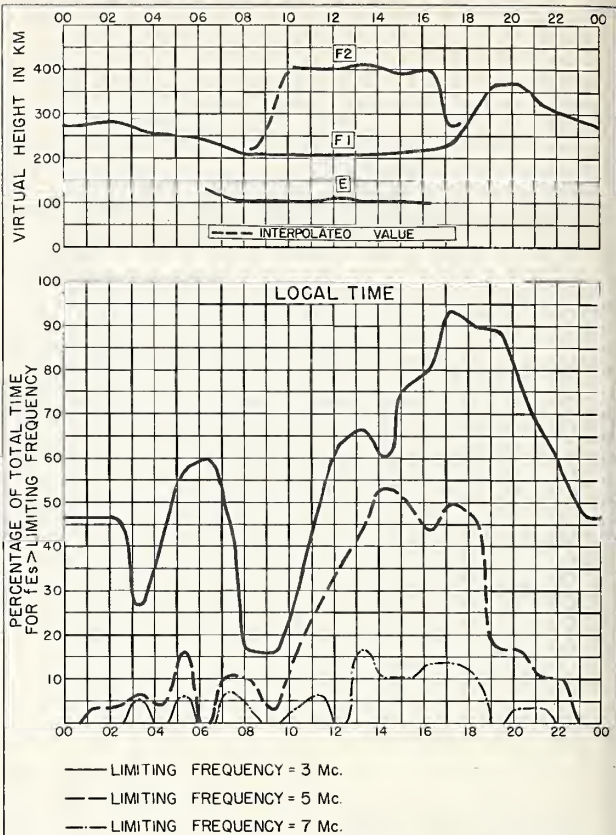


Fig. 110. PARAMARIBO, SURINAM

JULY 1957

NBS 490

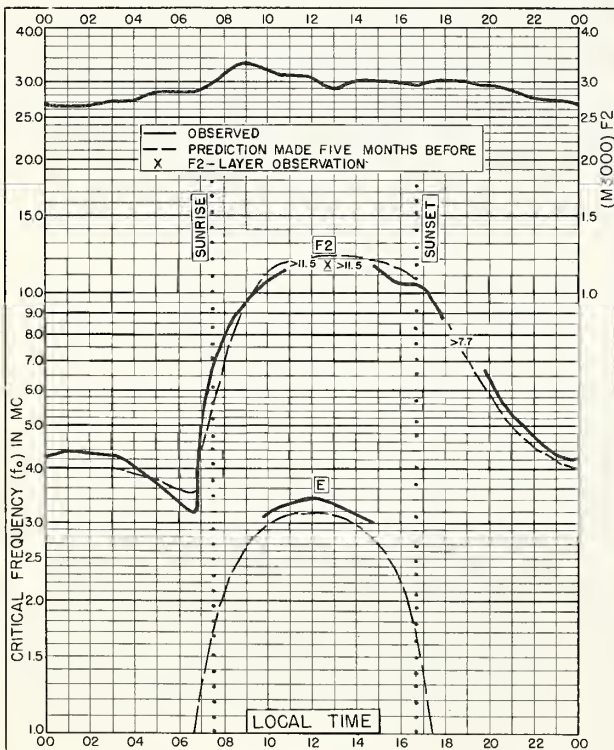


Fig. 111. HOBART, TASMANIA
42.9°S, 147.2°E

JULY 1957

NBS 503

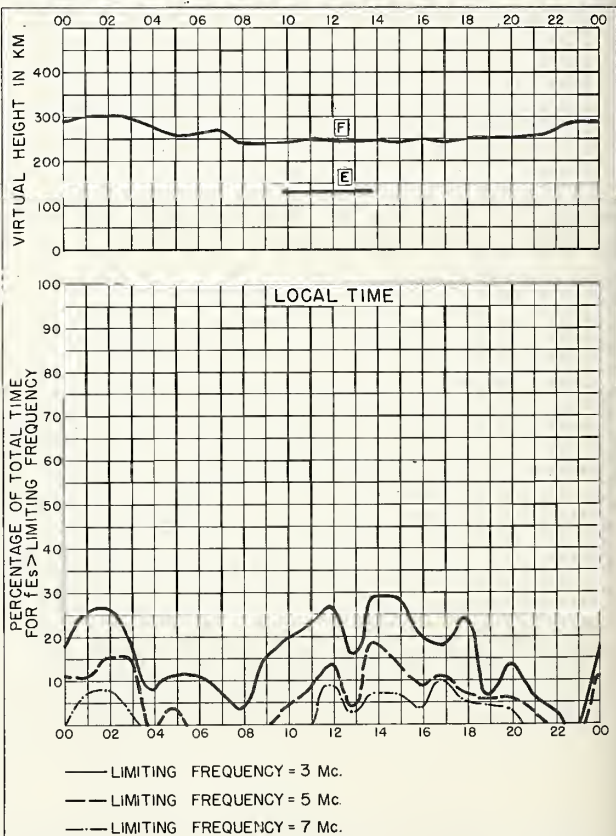


Fig. 112. HOBART, TASMANIA

JULY 1957

NBS 490

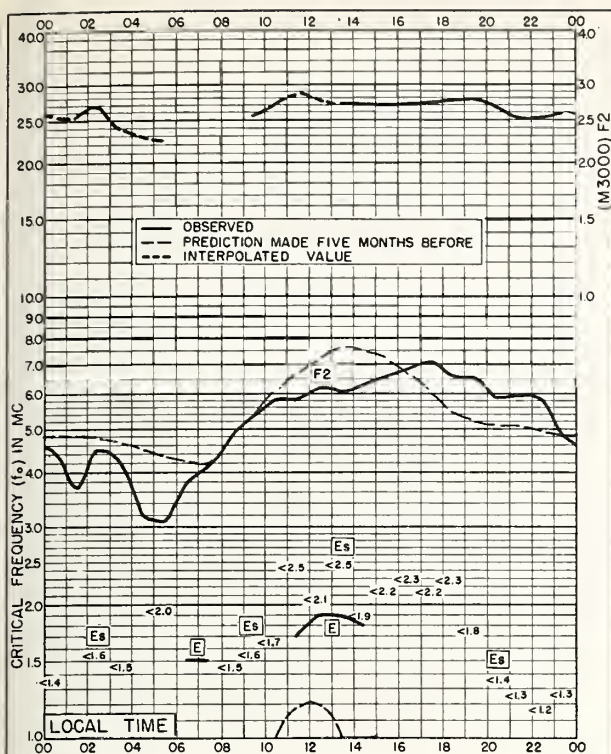


Fig. 113. CAPE HALLETT
72.3°S, 170.3°E

JULY 1957

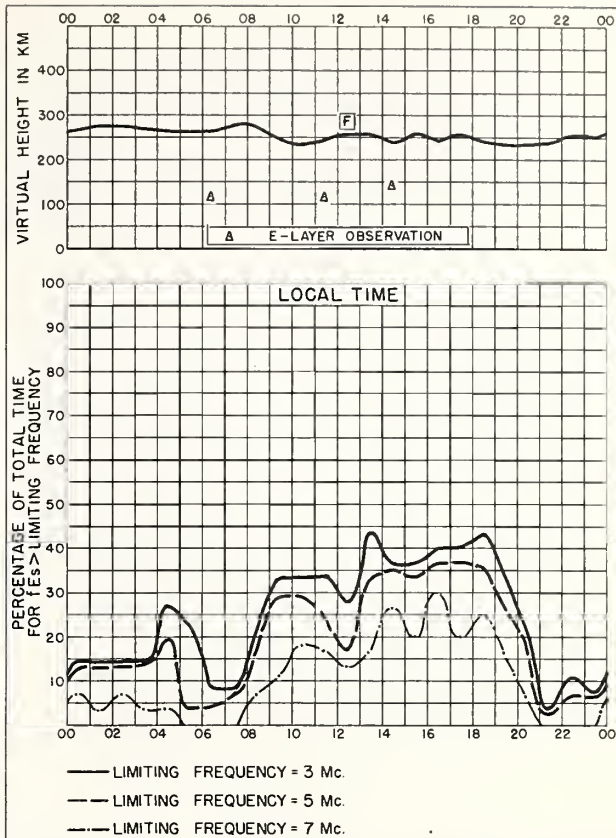


Fig. 114. CAPE HALLETT

JULY 1957

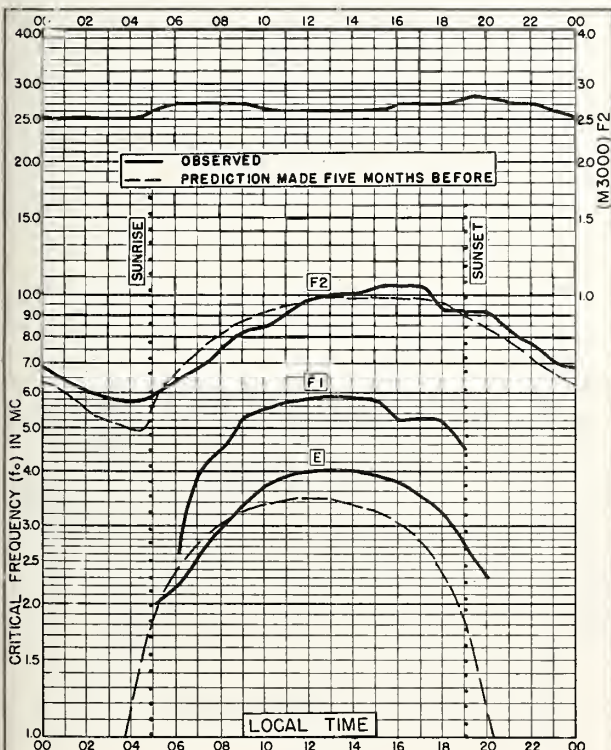


Fig. 115. LENINGRAD, U.S.S.R.
59.9°N, 30.7°E

APRIL 1957

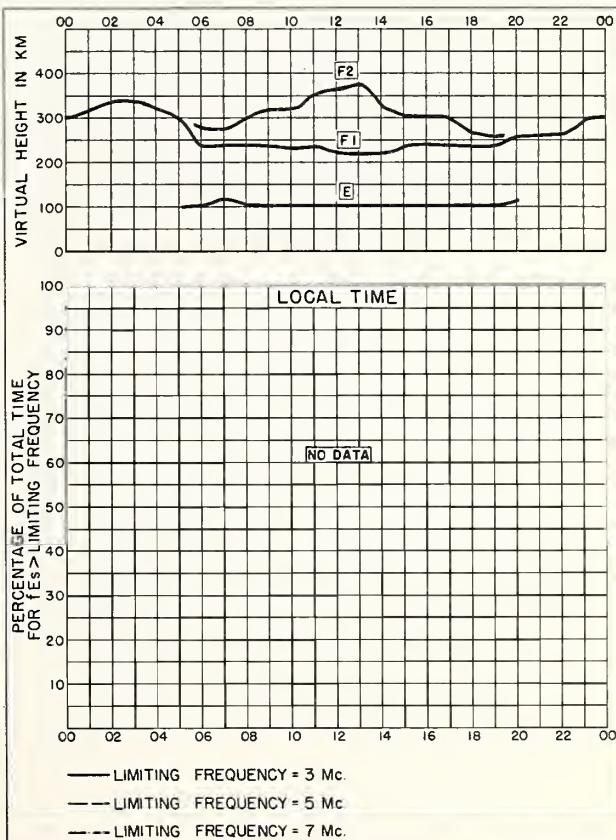


Fig. 116. LENINGRAD, U.S.S.R.

APRIL 1957

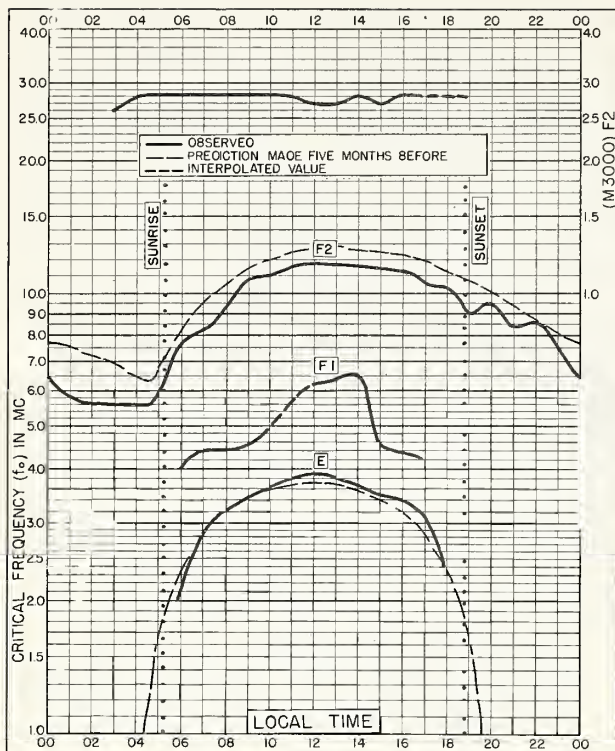


Fig. 117. IRKUTSK, U. S. S. R.
52.5°N, 104.0°E

APRIL 1957

NBS 503

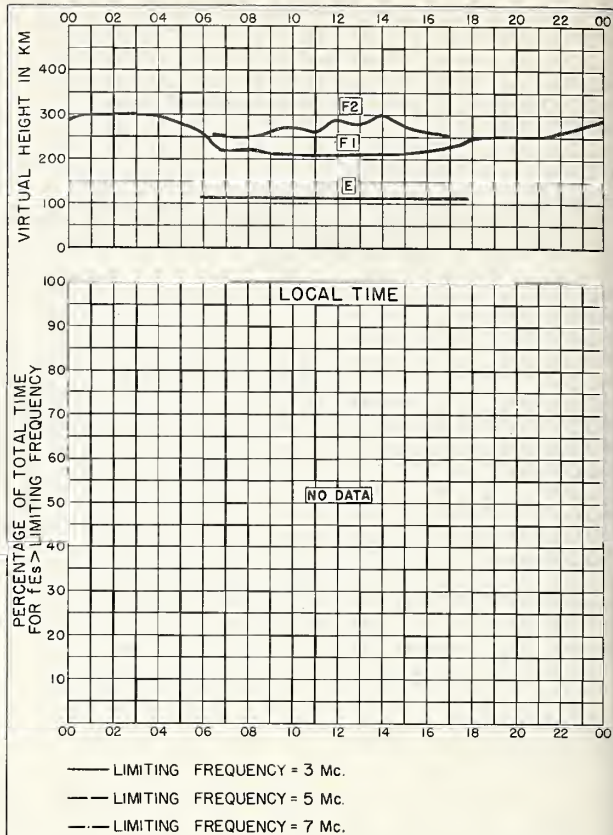


Fig. 118. IRKUTSK, U. S. S. R.

APRIL 1957

NBS 490

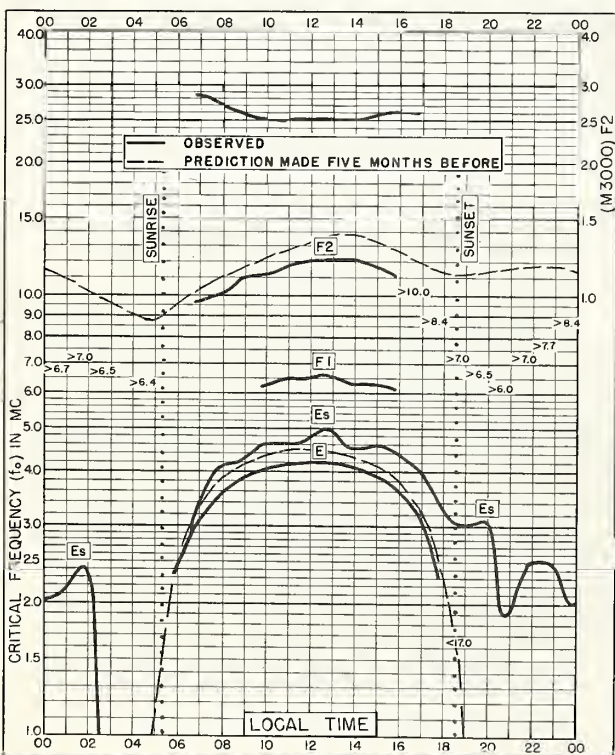


Fig. 119. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E

DECEMBER 1956

NBS 503

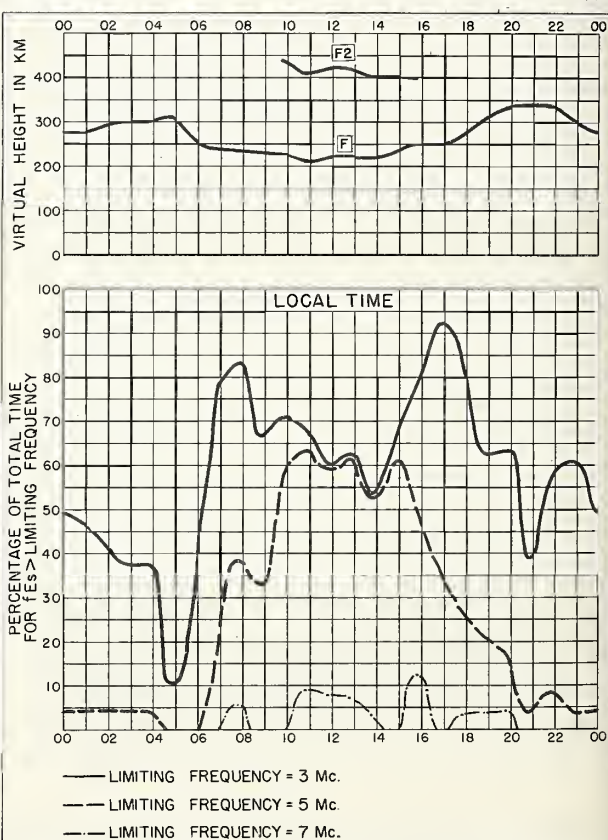


Fig. 120. TOWNSVILLE, AUSTRALIA DECEMBER 1956

NBS 490

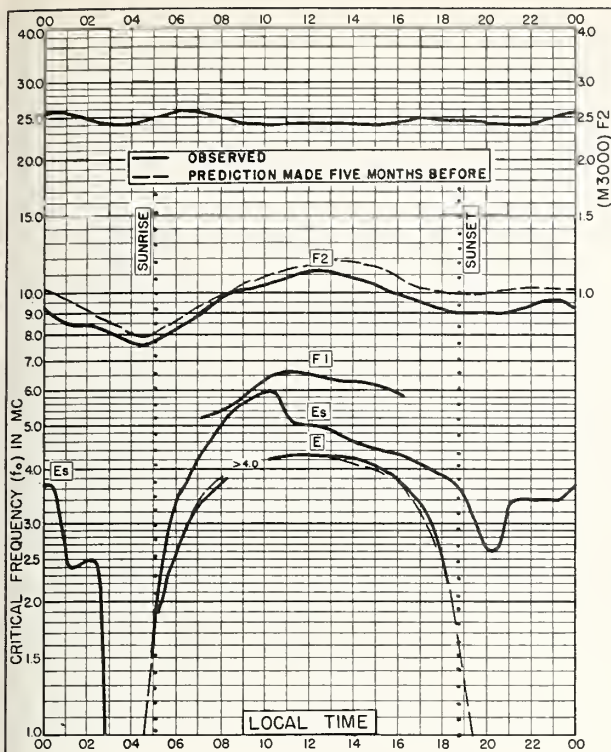


Fig. 121. BRISBANE, AUSTRALIA
27.5°S, 152.9°E
DECEMBER 1956

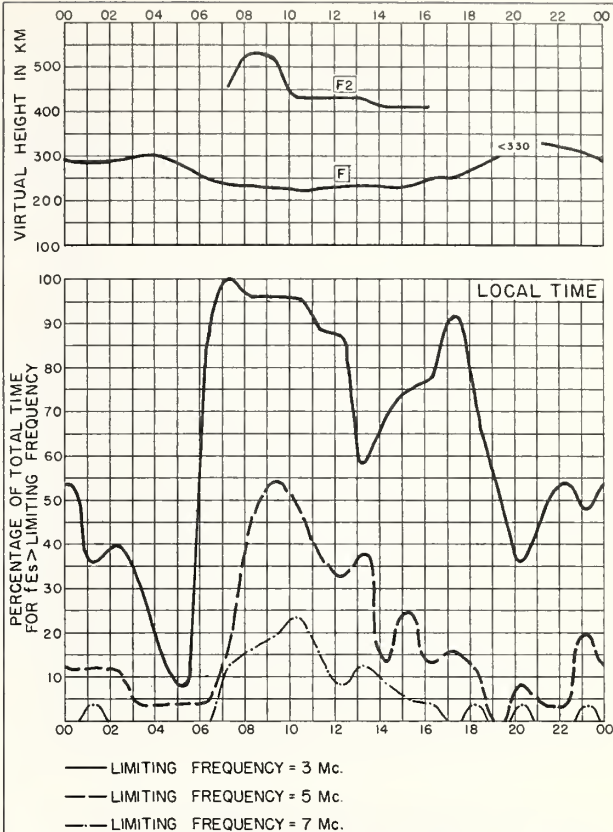


Fig. 122. BRISBANE, AUSTRALIA
DECEMBER 1956

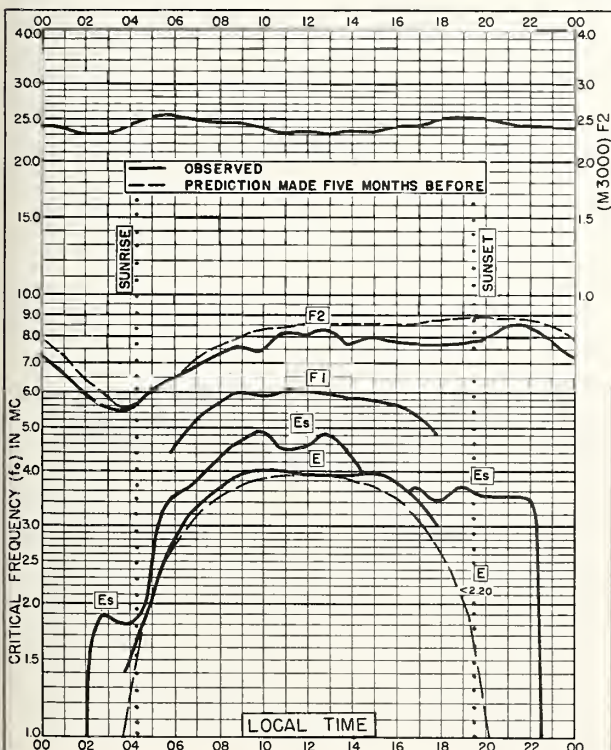


Fig. 123. HOBART, TASMANIA
42.9°S, 147.2°E
DECEMBER 1956

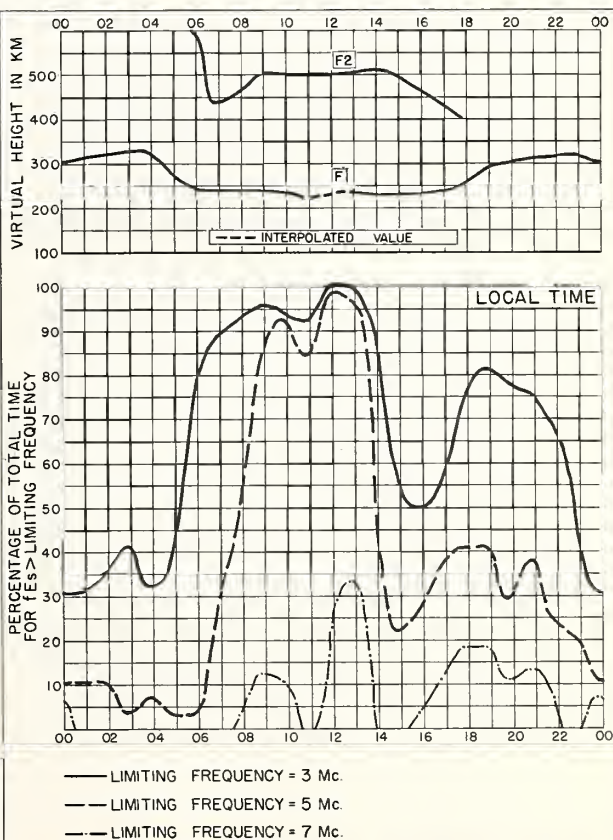


Fig. 124. HOBART, TASMANIA
DECEMBER 1956

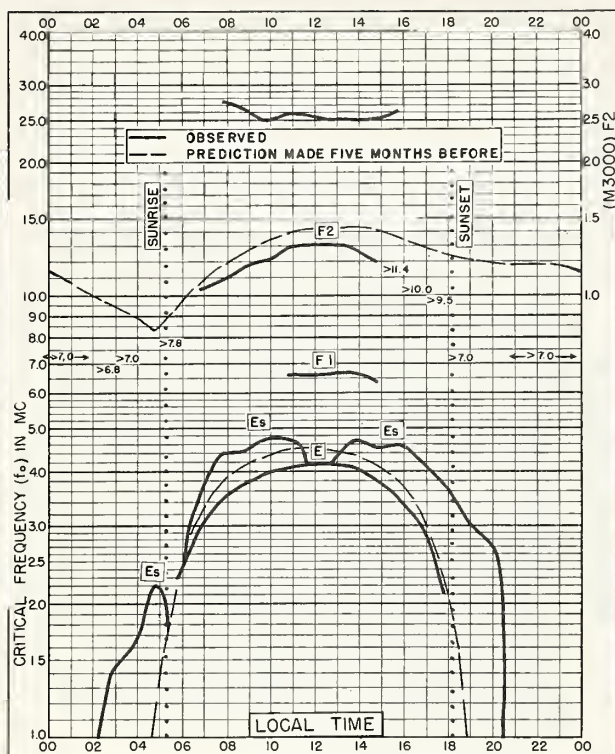


Fig. 125. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E NOVEMBER 1956

NBS 503

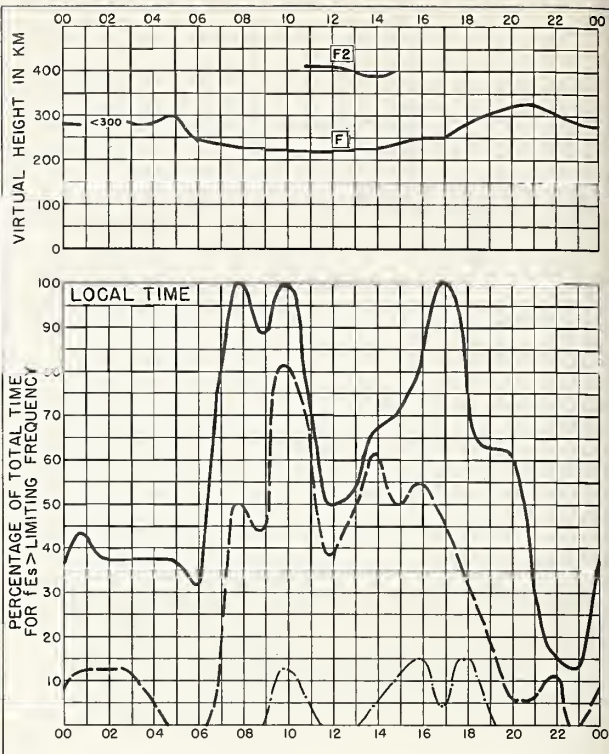


Fig. 126. TOWNSVILLE, AUSTRALIA
NOVEMBER 1956

Comanche-Spadanito-Rodriguez, Colo.

NBS 490

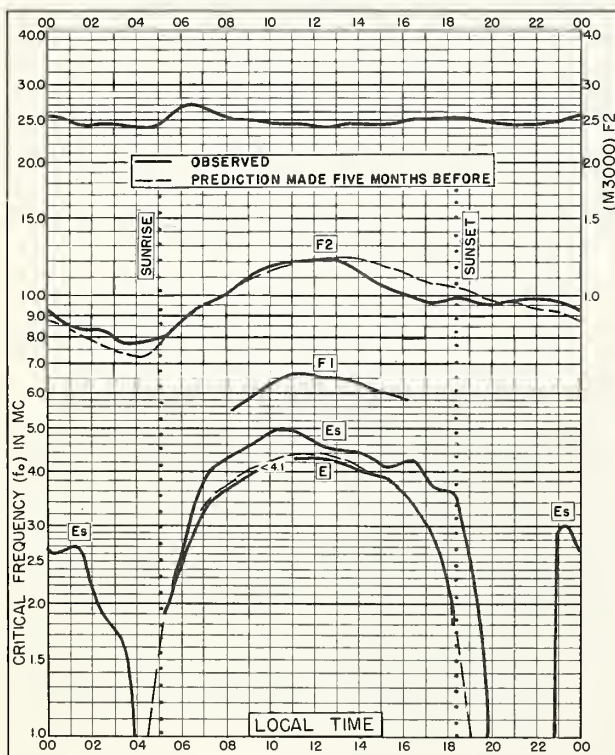


Fig. 127. BRISBANE, AUSTRALIA
27.5°S, 152.9°E NOVEMBER 1956

NBS 503

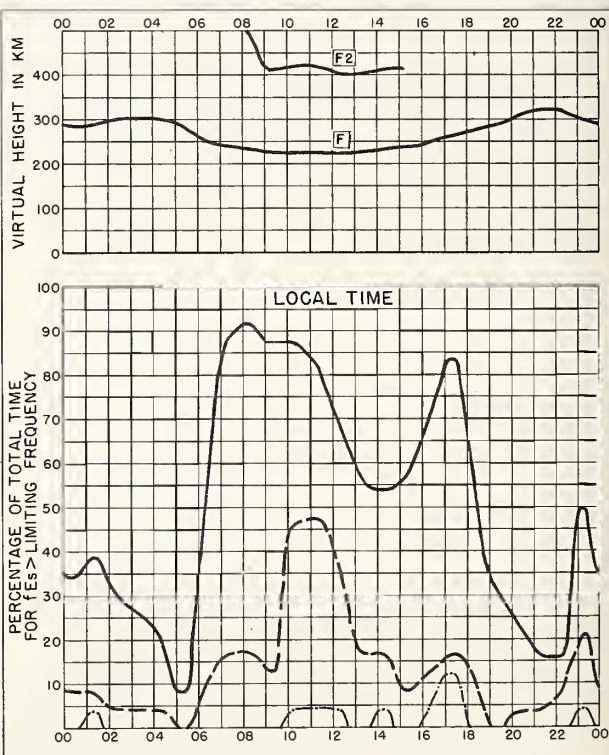


Fig. 128. BRISBANE, AUSTRALIA NOVEMBER 1956

Comanche-Spadanito-Rodriguez, Colo.

NBS 490

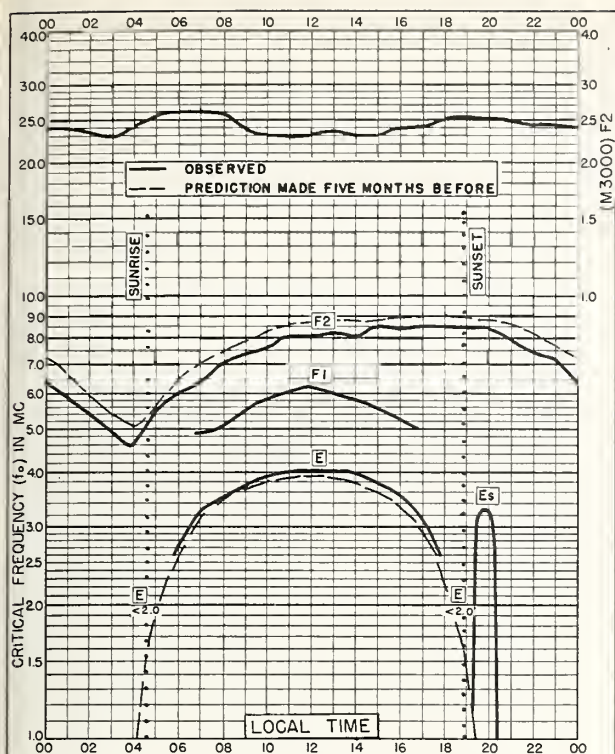


Fig. 129. HOBART, TASMANIA
42.9°S, 147.2°E NOVEMBER 1956

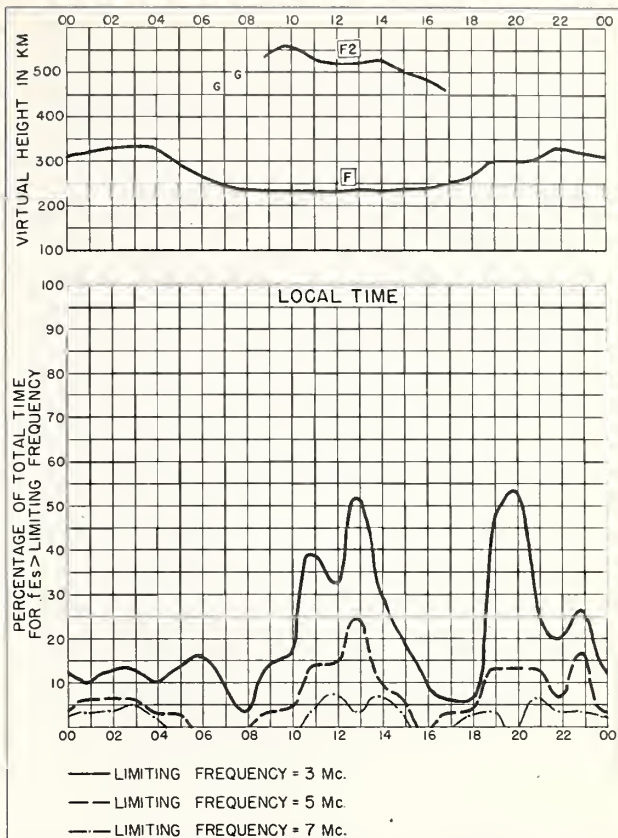


Fig. 130. HOBART, TASMANIA NOVEMBER 1956

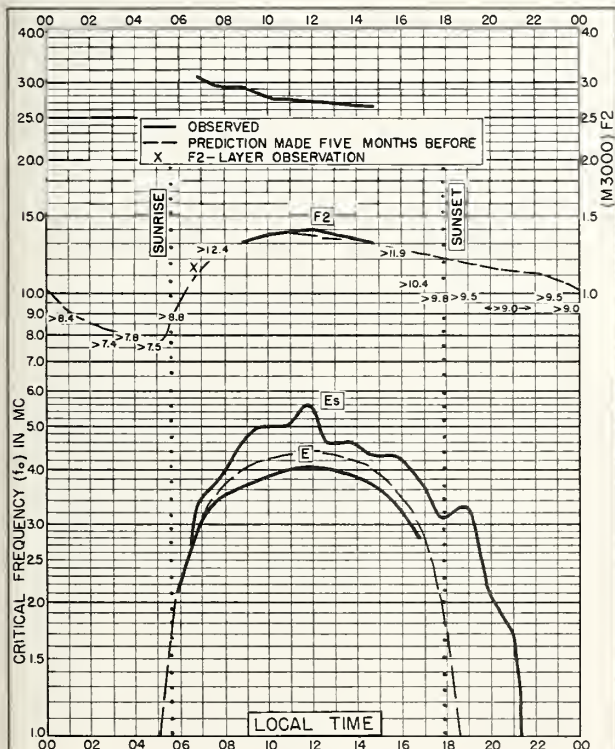


Fig. 131. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E OCTOBER 1956

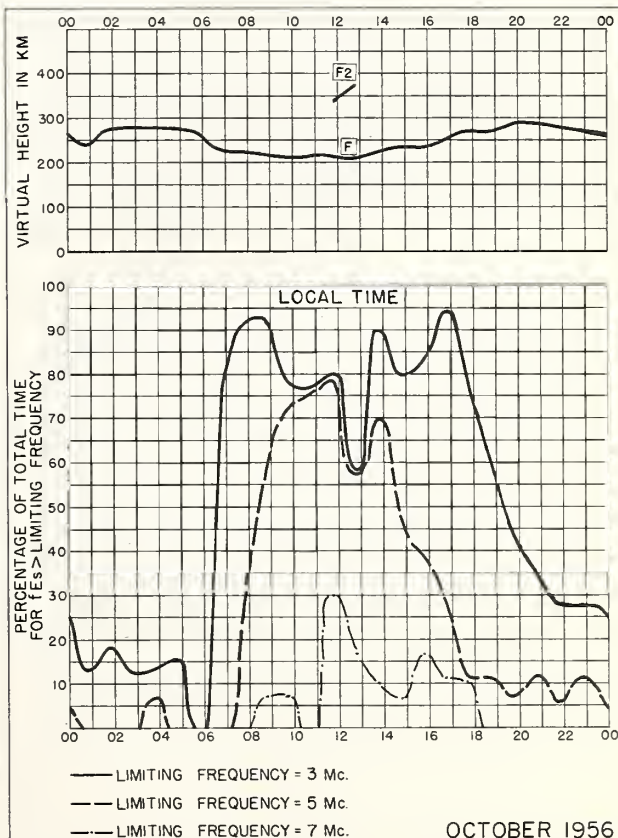


Fig. 132. TOWNSVILLE, AUSTRALIA OCTOBER 1956

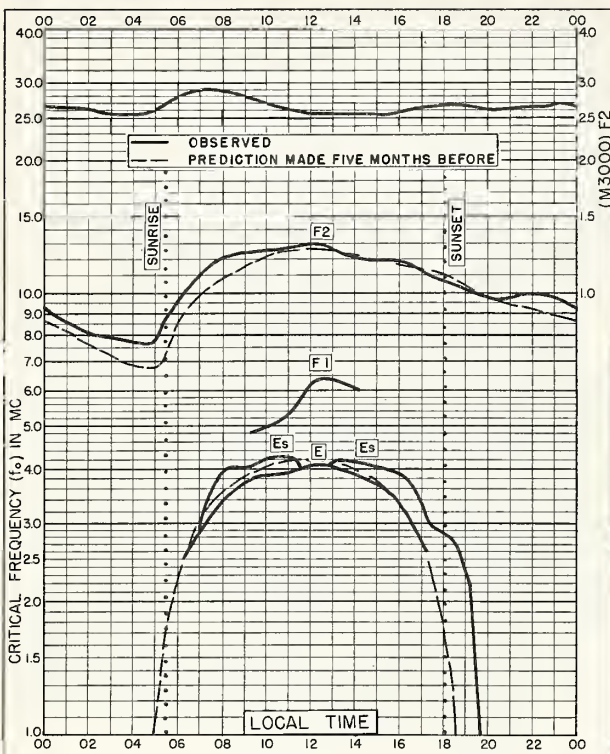


Fig. 133. BRISBANE, AUSTRALIA
27.5°S, 152.9°E OCTOBER 1956

NBS 503

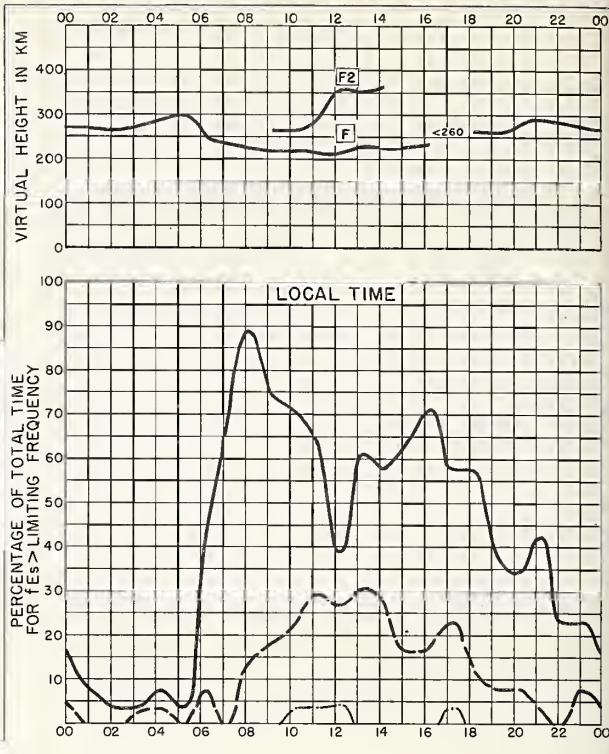


Fig. 134. BRISBANE, AUSTRALIA OCTOBER 1956

Comments—Standard—Boulder, Colo.

NBS 490

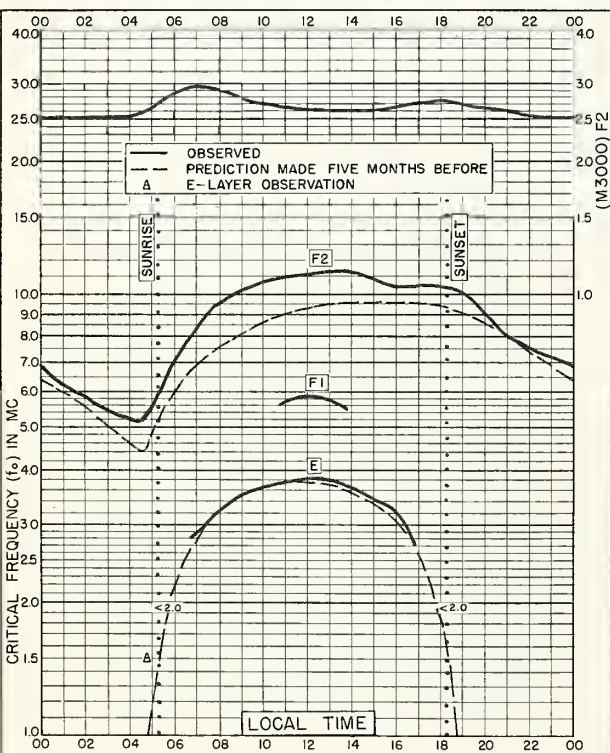


Fig. 135. HOBART, TASMANIA
42.9°S, 147.2°E OCTOBER 1956

NBS 503

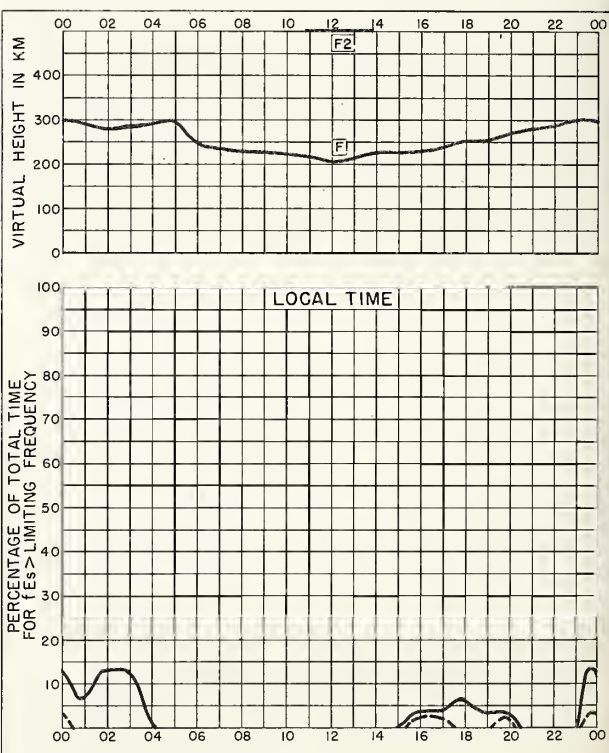


Fig. 136. HOBART, TASMANIA OCTOBER 1956

Comments—Standard—Boulder, Colo.

NBS 490

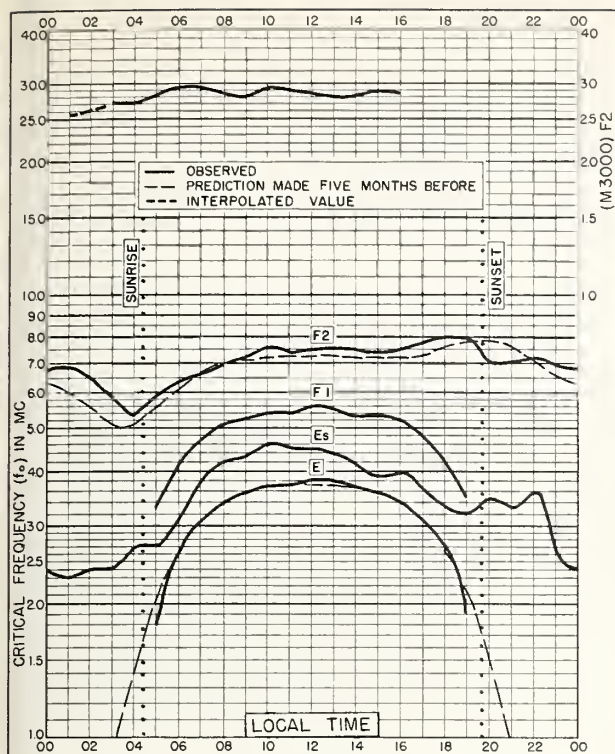


Fig. 137. POITIERS, FRANCE
46.6°N, 0.3°E

JULY 1956

NBS 503

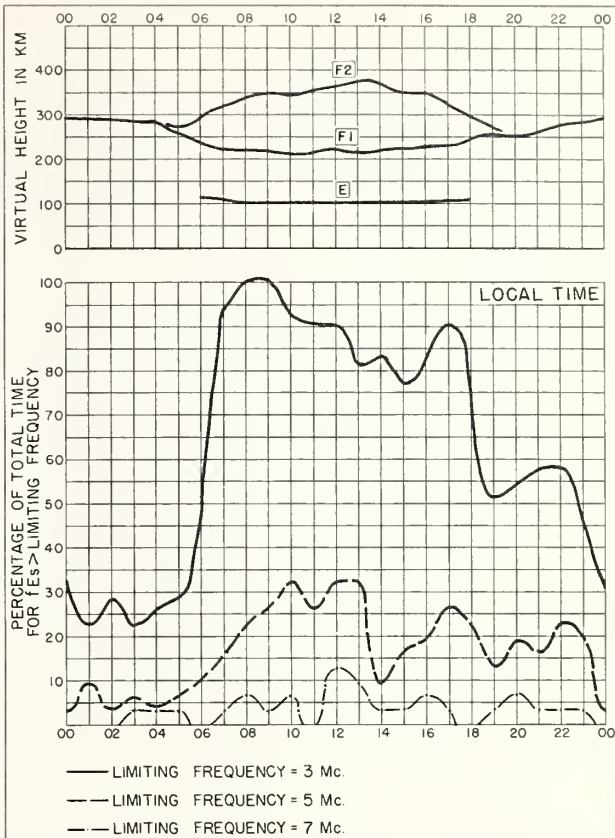


Fig. 138. POITIERS, FRANCE

JULY 1956

Commonwealth Scientific and Industrial Research Organisation, Canberra, Australia

NBS 490

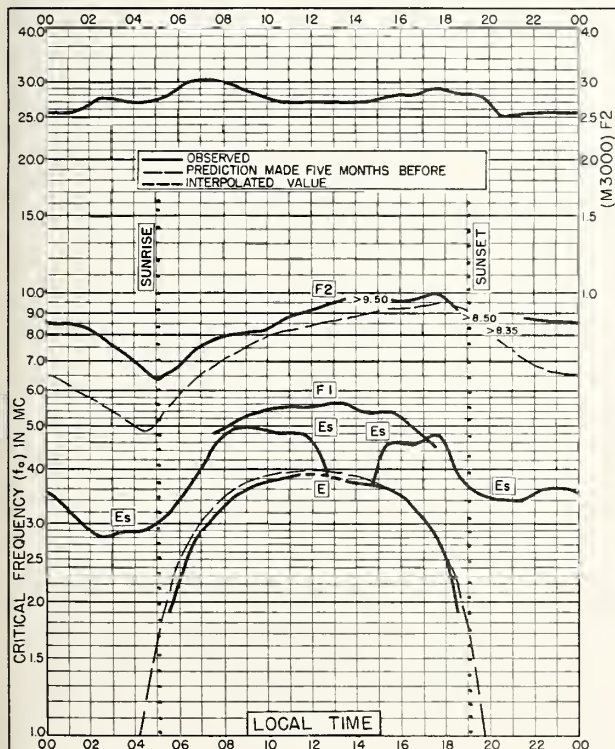


Fig. 139. CASABLANCA, MOROCCO
33.6°N, 7.6°W

JULY 1956

NBS 503

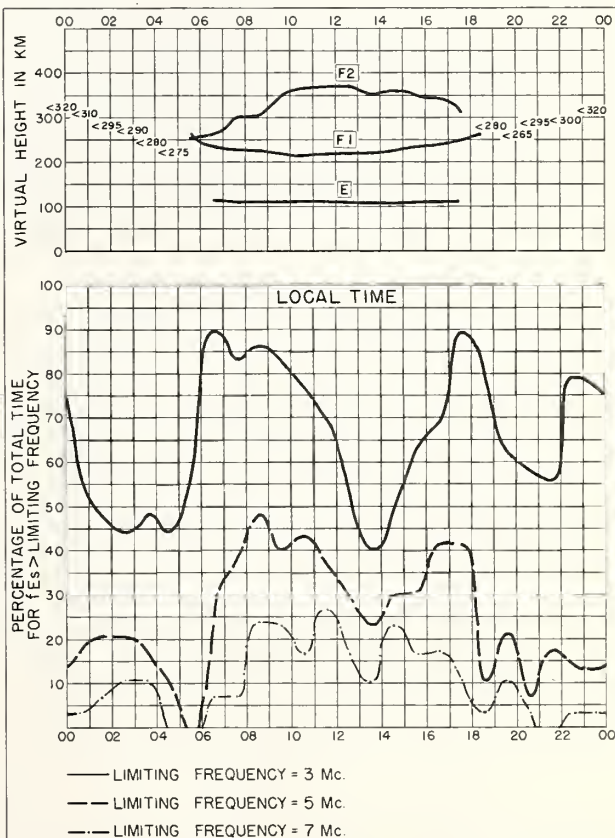


Fig. 140. CASABLANCA, MOROCCO

JULY 1956

Commonwealth Scientific and Industrial Research Organisation, Canberra, Australia

NBS 490

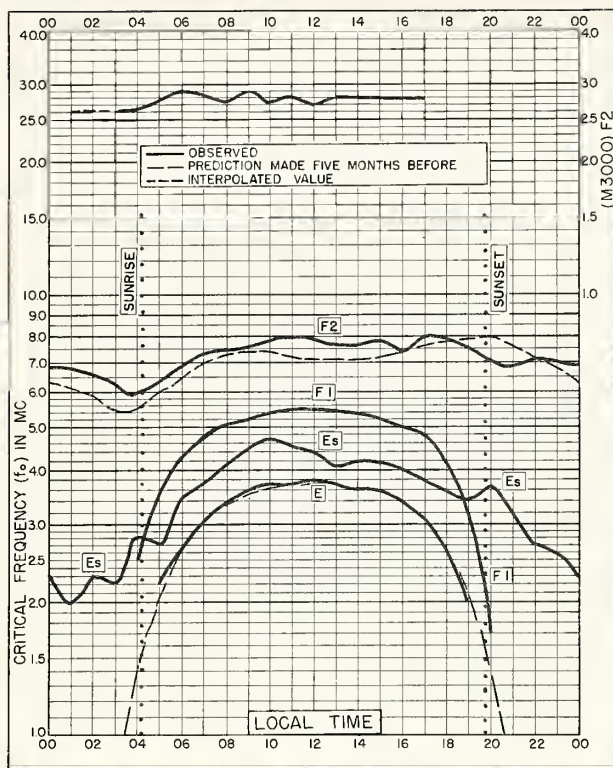


Fig. 141. POITIERS, FRANCE
46.6°N, 0.3°E

JUNE 1956

NBS 503

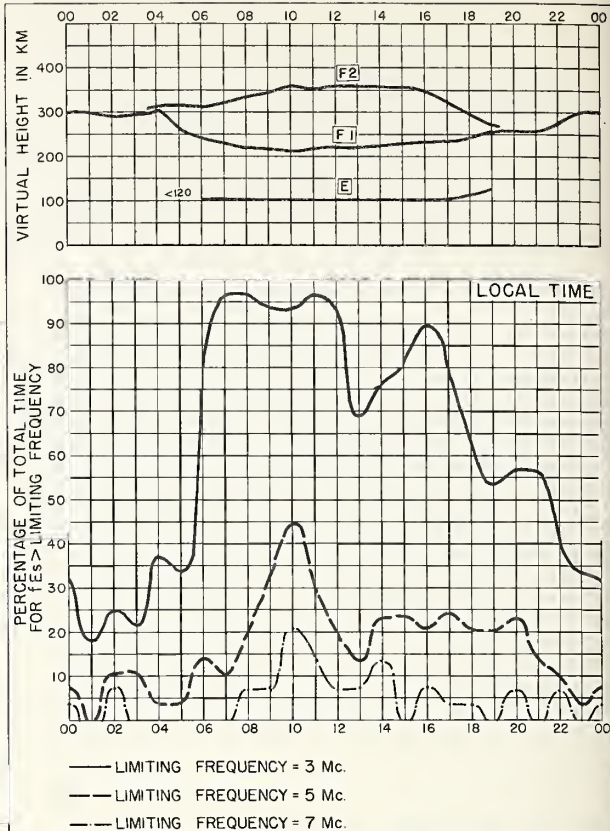


Fig. 142. POITIERS, FRANCE

JUNE 1956

NBS 530

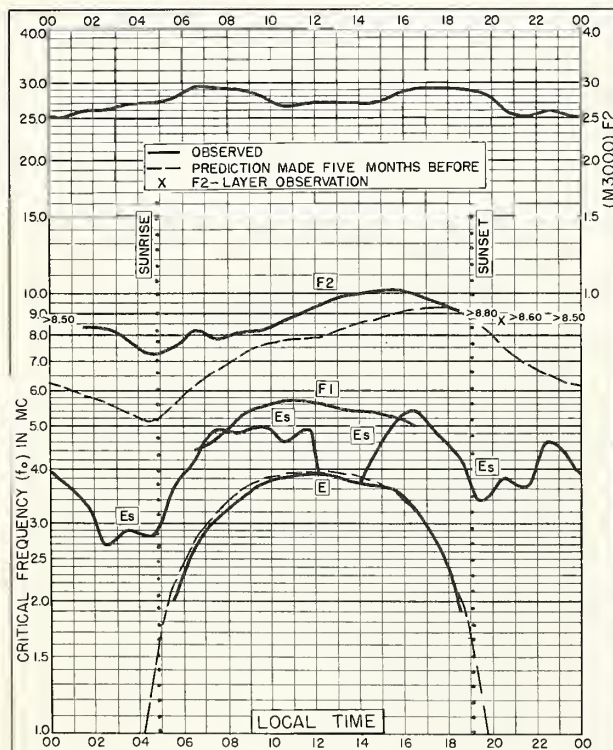


Fig. 143. CASABLANCA, MOROCCO
33.6°N, 7.6°W

JUNE 1956

NBS 503

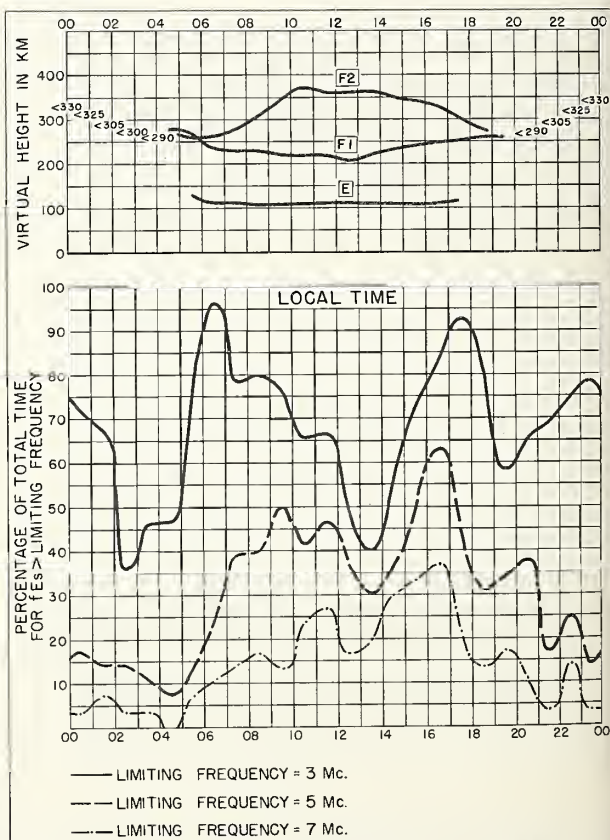


Fig. 144. CASABLANCA, MOROCCO

JUNE 1956

NBS 430

Index of Tables and Graphs of Ionospheric Data

in CRPL-F162 (Part A)

	<u>Table page</u>	<u>Figure page</u>
Adak, Alaska		
September 1957.	14	32
Akita, Japan		
August 1957	17	41
Anchorage, Alaska		
September 1957.	14	32
Baguio, P. I.		
September 1957.	15	35
August 1957	17	42
Baker Lake, Canada		
August 1957	16	38
Brisbane, Australia		
August 1957	18	46
December 1956	21	53
November 1956	21	54
October 1956.	22	56
Budapest, Hungary		
August 1957	16	40
Bunia, Belgian Congo		
October 1957.	12	28
Campbell I.		
August 1957	19	48
Canberra, Australia		
September 1957.	15	36
Cape Hallett		
July 1957	20	51
Capetown, Union of S. Africa		
August 1957	18	46
Casablanca, Morocco		
July 1956	22	57
June 1956	22	58
Christchurch, New Zealand		
August 1957	19	47
Dourbes, Belgium		
July 1957	19	49
Elisabethville, Belgian Congo		
October 1957.	13	29
August 1957	17	43
Fairbanks, Alaska		
September 1957.	13	31
Fletchers Ice I.		
October 1957.	11	24
August 1957	15	36

Index (CRPL-F162 (Part A), continued)

	<u>Table page</u>	<u>Figure page</u>
Formosa, China		
November 1957.	11	23
Ft. Monmouth, New Jersey		
October 1957	11	25
September 1957	14	33
Godhavn, Greenland		
September 1957	13	30
Grand Bahama I.		
September 1957	14	34
Hobart, Tasmania		
August 1957.	19	47
July 1957.	20	50
December 1956.	21	53
November 1956.	21	55
October 1956	22	56
Irkutsk, U.S.S.R.		
April 1957	20	52
Johannesburg, Union of S. Africa		
August 1957.	18	45
Leningrad, U.S.S.R.		
April 1957	20	51
Leopoldville, Belgian Congo		
October 1957	12	28
August 1957.	17	43
Lulea, Sweden		
August 1957.	15	37
July 1957.	19	49
Lycksele, Sweden		
November 1957.	11	23
Maui, Hawaii		
October 1957	12	26
Okinawa I.		
September 1957*.	14	34
Panama Canal Zone		
October 1957	12	27
Paramaribo, Surinam		
July 1957.	20	50
Point Barrow, Alaska		
September 1957	13	30
Poitiers, France		
July 1956.	22	57
June 1956.	22	58
Puerto Rico, W. I.		
October 1957	12	27
September 1957	15	35

Index (CRPL-F162 (Part A), concluded)

	<u>Table page</u>	<u>Figure page</u>
Rarotonga I.		
August 1957.	18	44
Reykjavik, Iceland		
September 1957	13	31
August 1957.	16	38
St. John's, Newfoundland		
October 1957	11	25
Sao Paulo, Brazil		
August 1957.	18	45
Scott Base		
August 1957.	19	48
Slough, England		
August 1957.	16	39
Sodankyla, Finland		
August 1957.	15	37
Thule, Greenland		
October 1957	11	24
September 1957	13	29
Tokyo, Japan		
August 1957.	17	41
Townsville, Australia		
August 1957.	18	44
December 1956.	20	52
November 1956.	21	54
October 1956	21	55
Wakkanai, Japan		
August 1957.	16	40
Washington, D. C.		
October 1957	12	26
White Sands, New Mexico		
September 1957	14	33
Winnipeg, Canada		
August 1957.	16	39
Yamagawa, Japan		
August 1957.	17	42

